



“THE APPROACH TO THE FORTRESS OF KWETTIAH”

SURGEONS TWOE AND A BARBER

BEING SOME ACCOUNT OF THE LIFE AND WORK OF
THE INDIAN MEDICAL SERVICE (1600—1947)

Compiled and Furnished with an Introductory Essay

by

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With a Foreword by

Lieut.-General **SIR BLNNETT HANCE**

K.C.I.D., O.B.E., D.H.S., F.M.S.

“La seule excuse de la colonisation c'est le médecin”

MARSHAI TYAUTIY



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This book is dedicated to
all members of the I M S ,
both past and present,
and especially to
Dorom Grey Crawford
whose indefatigable labours
made the writing of it possible

Vixere fortes ante Agamemnona
Multi, sed omnes illacrimabiles
Urgentur ignotique longa
Nocte, carent quia vate sacro

Horace Carm IV, 9

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PREFACE

THE history of the Indian Medical Service was written once and by Dr. G. G. Crawford, and published by him in 1914—the result of many patient delving into obsolete and long-forgotten records—a labour which will never again be attempted.

When, however, in 1944 it became evident that the days of the Service about to be numbered, the Director-General (Lieut.-General Sir Bennett) expressed the hope that the story of its deeds might be brought up to date, possible, recorded in a more popular form.

In a preliminary survey that was made of this task, it was noted that Crawford in the preface to his history had said: "My aim in the compilation has been to make an interesting book so much as to put together a mass of facts." This implied challenge was accepted and the result is to be found in the following—in the earlier sections of which such material as seemed best suited to make an easily readable sequence has been taken from the vast store laid up by Crawford and most generously made available by his brother, Lieut.-Colonel J. M. Crawford and his son, Mr. W. S. Crawford. During this work a large number of Crawford's original authorities were reviewed and fresh material for the earlier periods collected from other sources and included.

Of his own work Crawford had said that it "has no pretensions to originality but is altogether a compilation from older sources. It is difficult to be original in writing history. Indeed, originality in history would come perilously near to fiction." "In this compilation," he says, "I have acted on Molière's maxim—*je prends mon bien où je le trouve*—and have borrowed from every source with which I was acquainted, when I could find matter bearing on my subject." In fact he apologised that, in some instances, the book had strayed somewhat apart from its subject till it resembled that apocryphal treatise—*De omni re scibili et quibusdam aliis*—attributed to the philosopher Sidrac, who lived, men said, before the Flood.

In selecting material for the later sections not covered by Crawford, it was felt that such an excellent precedent could be followed with advantage, and many additional sources have been put under tribute by the present author. Though he trusts that he has made adequate acknowledgments either in the text or the appendices, he feels a special need to record in this place the inspiration which he received from reading Sir George Birdwood's "Report on the Old Records of the India Office"—a book which, in spite of its somewhat austere title, proved to be a veritable "magic casement opening on the foam of perilous seas." It was an added pleasure to realise that Sir George himself had been a distinguished member of the old Bombay Medical Service.

The present narrative is intended to be read as a story, and is therefore furnished with no portentous *apparatus criticus* lurking, as Professor Norwood has it, "at the

bottom of the page like some open sewer at the end of a gracious promenade." As, however, no other complete record of the Service exists, an attempt has been made to render this story, within its limits, authoritative, and this has inevitably led to the inclusion of some less interesting matter in the administrative sections.

The present author asks indulgence if he should seem to have added, by his introductory essay, to the "*quibusdam alius*" apologised for by Crawford, and would plead, in extenuation, that that essay is integral to his theme and constitutes, in fact, what old Mr Woodall himself might perhaps have described as a "*Viaricum*, or Pathway" to the story which lies beyond—the story of a Service at once so versatile, so adventurous, so beneficent to humanity and withal so venerable that it would be difficult to find its parallel in the recorded annals of history—in fact, the story of the Indian Medical Service during the three and a half centuries of its existence.

There are two matters which may cause difficulty in reading these old records. Firstly, the use of the abbreviation I M D in the early days to designate the Indian Medical Service. This was quite incorrect, as the Service has always been a Service and never a Department. The use slipped in on the analogy of the letters A.M.D., which described the British Army Medical Department, or Medical Staff, which later (1898) became the Royal Army Medical Corps. The letters I.M.D. were correctly used at a later date to designate the Indian Subordinate Medical Department after the word "Subordinate" had been dropped from that title in 1918.

The other possible cause of confusion is the use of double year dates at the beginning of official documents prior to 1751. Before that date the official year began on March the 25th, and the period from the 1st of January to the 24th of March was reckoned as belonging to the previous year, *i.e.* the date that we now know as February 1st, 1748, was recorded at that time as February 1st, 1747/48.

It is recommended that this story shall be read in conjunction with Dennis Kincaid's delightful study of "British Social Life in India" (Routledge, 1938), which, though not, indeed, complimentary to the Service itself, is very complementary to its story.

The title of the present story commemorates those adventurous doctors who sailed with the first fleet of the Company in the "four tall ships" commanded by Sir James Lancaster in 1600. The frontispiece, though in itself it has no direct bearing upon the history of the Service, is introduced to give an example of the attainments of the Service in the field of art.

In conclusion, the author wishes to express thanks to his publishers for having accepted the hazardous venture of producing a book of this nature in such difficult times, and especially to Dr. Johnston Abraham and Mr Owen R. Evans for the care which they have taken to ensure that this memorial to the Indian Medical Service shall be adequately presented to the world.

ACKNOWLEDGMENTS

- The author wishes to acknowledge with gratitude his obligations, especially —
- to Lieut.-General Sir Bennett Hance for his continual encouragement and help during the preparation of this story, and for writing an Introduction to it,
 - to Lieut -General Sir Ernest Bradfield for permission to read material which he had collected on the period 1918-39, for publication in his "Service Memoirs",
 - to Lieut -Colonel C. A. Bozman for his chapter on the I.M.S and Public Health, for material and discussions on the period 1939-45, and for reading the whole manuscript in its final state,
 - to Lieut -Colonel H. W. Mulligan for his chapter on the I M S and Medical Research,
 - to Lieut.-Colonel J. M. Crawford and Mr W S Crawford for their generous permission for full use to be made of Crawford's material and books in the preparation of this story,
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 - to Messrs. W. Thacker & Co , the publishers of Crawford's " History of the I M S.", for permission to use material from that work,
 - to Messrs W H Allen & Co Ltd , for the use of extracts from Sir George Birdwood's " Report on the Old Records of the India Office ",
 - to Messrs G Routledge & Sons Ltd , for permission to make quotations from Dennis Kincaid's " British Social Life in India ",
 - to the Royal Society of Tropical Medicine and Hygiene for supplying a list of the books written by I.M.S Officers which were presented to the library of the Society by Crawford,
 - to the Under-Secretary of State for India for permission to quote from certain hitherto unpublished documents in the period 1918-39 (Administration)
 - to Mr R Langham Carter for material concerning David Richardson.
 - to the following owners of the copyright of certain illustrations used for this book, details of which will be found in the appropriate place The Superintendent of Records, India Office, the Hakluyt Society, the Trustees of the Victoria Memorial, Calcutta, the Fine Arts Society, London, the Royal Asiatic Society of Bengal, Messrs Thomas H Parker, London, Messrs Lafayette, London, and also to Dr Randle, Librarian of the India Office, for his help in obtaining copies of illustrations from books in the India Office Library
 - to his stenographers, Amar Nath Sharma and Prem Nath Tannan, for the patience and care with which they typed and re-typed a difficult manuscript

FOREWORD

By SIR BENNETT HANCE, Director-General I M S. (1943)

“ The old order changeth, yielding place to new.”

Tennyson, “ Idylls of the King ”

THIS book is not a History of the Indian Medical Service; that was done by Lieut.-Colonel McDonald, the present author, has stated in his preface, for all by Dirom Grey Crawford,” a masterly production, the two volumes cover the development of the Service from its dim beginnings in the early century to the period immediately preceding the outbreak of the first World War. That his interest in his subject was undiminished by retirement is shown by the publication in 1930, of the “ Roll of the Indian Medical Service 1611-1929 ” and there is little doubt that had he been spared, he would have brought it up to date ere now. It has remained for Lieut.-General Sir Ernest B. B. to supplement the History by his “ Service Memoirs ” and for Lieut.-Colonel McDonald to bring the “ Roll ” up to date. Both these tasks were accomplished in spite of the heavy preoccupation which the second World War imposed on these men and the Service is under a deep obligation to them for these self-imposed and labours.

The Indian Medical Service has enjoyed but scant publicity. Crawford has made it clear that the aim of his History was “ to put together a mass of facts ”—in other words, to provide a history and a book of reference and not a story. The Service has never advertised itself; on the contrary it has always shunned the limelight and content “ to do the right, as it was given to it to see the right ” and to leave its results to speak for themselves. In some ways it might have been better had it been otherwise, and had its traditions and achievements received the publicity accorded to other distinguished, but no more meritorious, labourers in the same vineyard. Had this been so it is possible that the imagination of administrators might have been fired, and the wind of bureaucratic control tempered to the shorn lamb of science. The achievement and devotion to duty, with consequent benefit, moral and material, not only to the Service itself but to the health of the subcontinent it served, might have been “ might have been ” on which to speculate.

When, in 1944, it became clear that the formation of the Indian Army Medical Corps would involve the Service in yet one more of the many crises which have been its lot, but this time of so radical a nature that it might well prove mortal, it seemed to many of us who were then serving that it was time that the “ Story of the Indian Medical Service ” should be made available to a wider public than the comparatively limited and leisured few who could and would peruse the “ History.” Fortunately

for the Service, the task produced the man—a man, moreover, singularly well-fitted by natural aptitude and situation to perform it—and Lieut -Colonel McDonald undertook what started as a duty but developed, it may be shrewdly suspected, into a labour of love

The author has happily epitomised his subject in his preface “ The story of a Service at once so versatile, so adventurous, so beneficent to humanity and withal so venerable that it would be difficult to find its parallel in the recorded annals of history ” The claim is serious, but by no means extravagant Its versatility will hardly be disputed, for apart from its primary function of preventive and curative medicine the Service has produced men who have achieved distinction as diplomatists, experts in telegraphy, zoologists, naturalists, penologists, and in many other capacities

Nor will the application adventurous be denied to a body of men who have been pioneers in their subject from the deserts of Arabia to the coasts of China, who have accompanied every expedition in which the Indian troops of John Company and the Crown have been engaged, as well as every variety of “ mission,” from embassies to neighbouring potentates to expeditions to climb Mount Everest

Of its benefits to humanity the history of medicine can speak The transmission of malaria, and the nature of the parasite of kala azar and its transmission have been established, cholera and amœbic dysentery robbed of half their terrors, and more than half their mortality, and the therapeutics of leprosy advanced by officers of the Indian Medical Service The foundations of modern plastic surgery and of the surgery of the prostate gland were laid by officers of the same Service, while its contributions to the knowledge and treatment of diseases of the eye have obtained recognition throughout the world Nor is its beneficence to humanity to be measured only by the outstanding contributions of its outstanding members The control of epidemic disease has now, thanks to the labours of the Public Health branch of the Service, reached a high degree of efficiency, with the consequent saving of millions of lives, but who can count those saved in earlier and less happy times by the Civil Surgeons who galloped, on relays of ponies, across their districts in the desperate attempt to overtake and pass the spread of cholera by panic-stricken refugees, and to disinfect the wells and water supplies on their path ? Or who can assess the lives saved and suffering prevented by the officers on plague duty, carrying with them Haffkine's vaccine and securing by blandishment or by compulsion the evacuation of plague-infected villages to shelters in the sane and safe countryside ? No chronicle exists of these benefactors save the obituary notices of those who paid with their lives for their devotion to the daily round and common task Yet those who saw them in its performance, those who benefited thereby and even more, those of us who have endeavoured to follow in their footsteps know how their memory lives in the countryside they served

The claim of the Service to venerability has been established beyond dispute by Crawford Great age, whether of an individual or an institution, inevitably carries with it a savour of romance So much has been experienced, so much

the yardstick by which their performance will be judged. So, its journey accomplished, its share of the task completed and the charge faithfully handed on to its successors, the Indian Medical Service may justly claim to share with Wren the proud epitaph "*Si monumentum requiris, circumspice*"

J B H

TABLE OF CONTENTS

BACKGROUND

The Invention of the Indies

BEGINNINGS—SEVENTEENTH CENTURY

1600. The Founding of the East India Company	
John Woodall, First Surgeon-General to the Company	
The Development of the Western Presidency	
Early Settlements at Madras	
The Early History of the Company in the Bay	
A Note on the Minor Medical Services of the Company	
Surgeons in the Service of the Princes	
A Note on Hospitals in India in the Seventeenth Century	

GROWTH—EIGHTEENTH CENTURY

The First Half of the Eighteenth Century	
A. 1714-1717—The Embassy to Delhi	
B. The Period 1720-1750	5
The Second Half of the Eighteenth Century	
The Period 1750-1763	
A. The Story of John Holwell	56
B. Some Notes on other Medical Officers in Calcutta during this Period	58
C. The Story of William Fullerton and the Patna Massacre	60
1764—The Foundation of the Services for the Three Presidencies	64
1786—Formation of the Medical Boards	72
1788—The Grant of Commissions	77
A General Review of the Condition of the Service in the Eighteenth Century	81

FLOWERING—NINETEENTH CENTURY

The First Half of the Nineteenth Century	99
1857—The Mutiny	119

	PAGE
The Sea Service of the Company	122
1858—The Crown Takes Over the Government of India	134
The Period 1865—1896	140
1896—The Amalgamation of the Three Medical Establishments into one Indian Medical Service	150
 DECLINE TWENTIETH CENTURY	
The Period 1900—1913	155
The Life of a Doctor at the Zenith of the Service	160
1914—1917—The First Great World War	171
1918—1939—The Decisive years	
1 Administration	186
2 Professional	194
A Note on the Subordinate Medical Services in India	202
The I M S and Medical Research	210
The I M S and Public Health	217
The I M S and Medical Education	231
1939—1945	
1 The Second Great World War	240
2 Disintegration	241
A List of those Officers who have been Awarded the Fellowship of the Royal Society	259
Citations of those Officers who have won the Victoria Cross	260
A List of Officers Killed in Action or on Active Service	262
 APPENDICES	
1 A List of the Heads of the I M S from the Abolition of the Medical Boards in 1858, together with the Presidents of the Medical Board at the India Office since that date and the Public Health Commissioners with the Government of India	267
2 Tables Showing the Strength of the Service at Various Times during the Last Century	269
3 A List of References to Passages Quoted in the Text	272
4 A List of Certain Books and Articles Dealing with Matters Bearing on the History of the I M S	276
5 A List of a Small Collection of Books Written by I M S Officers, Presented to the Royal Society of Tropical Medicine and Hygiene by the Late Lieut -Colonel D G Crawford	275

ABBREVIATIONS

A M.D.	Army Medical Department
B M J.	<i>British Medical Journal.</i>
C.G.	<i>Calcutta Gazette.</i>
Cons.	.. Consultations.
D I.G.	Deputy Inspector-General.
D S.G.	Deputy Surgeon-General.
D G	Director-General.
G.O	General Order.
G O.C C.	General Order by the Commander-in-Chief
G O G	General Order of Governor
G O G G	General Order of the Governor-General
G M C	General Medical Council.
I M D	Indian Medical Department.
I G	Inspector-General
Mily Cons	Military Consultations
Pub. Cons	Public Consultations.
S M O	Senior Medical Officer.
S A S	Sub-Assistant Surgeon
S.S	Superintending Surgeon
S.G.	Surgeon-General

ILLUSTRATIONS

<p>“ The Approach to the Fortress of Kwettah ” (After a water colour drawing by James Atkinson, Superintending Surgeon of the Army on the Indus, 1842, from the original in the possession of the India Office, reproduced by permission)</p>	<p>.. .. Frontispiece</p>
<p>Master Robert Thorne’s “ Little Mappe or Carde of the Worlde ” (1527) (Reproduced by permission from “ Divers Voyages Touching the Discovery of America,” collected by Richard Hakluyt and published by the Hakluyt Society, 1850) (See also p 14)</p>	<p><i>facings</i> page 3</p>
<p>John Woodhill, First Director-General (From the 1630 edition of the “ Surgeon’s Mate ”—an engraving by George Glover.)</p>	<p>.. .. 23</p>
<p>John Fryer, F R.S (From the frontispiece of his “ New Account of the East Indies and Persia ” (1698) Reproduced from the copy in the India Office Library, by courtesy of the Librarian)</p>	<p>.. .. 28</p>
<p>John Zephaniah Holwell, F R.S. (Reproduced from the original portrait by Sir Joshua Reynolds, by permission of the Trustees of the Victoria Memorial, Calcutta)</p>	<p>.. .. 56</p>
<p>“ The Remnants of an Army ” (Reproduced from the original painting by Lady Butler, by permission of the Fine Arts Society, 148, New Bond Street, London, the owners of the copyright)</p>	<p>.. .. 101</p>
<p>Sir Ranald Martin, F R.S.</p>	<p>.. .. 107</p>
<p>Sir John McNeill, F R.S.</p>	<p>.. .. 113</p>
<p>Simon Nicolson (Reproduced by permission from a painting in the possession of the Royal Asiatic Society of Bengal)</p>	<p>.. .. 118</p>

The <i>Ganges</i> , Hon. East India Company's ship of 1,500 tons, built in 1790 on the Thames and, in 1804, taking part in Dance's famous action against the French (See also page 95)	<i>facing page</i> 122
(Reproduced from an oil painting by Thomas Whitcombe (1808) by permission of Messrs Thomas H Parker, 2, Albemarle Street, London, the owners of the copyright)	
Sir Joseph Fayrer, F R S	,, ,, 146
Sir Ronald Ross, F R S	,, ,, 147
Dirom Grey Crawford	,, ,, 149
John Alexander Sinton, V C , F R S	,, ,, 171
Sir William Rice Edwards	,, ,, 195
Sir Leonard Rogers, F R S , in his laboratory at Calcutta (From a photograph by Major Lloyd, I M S , 1917)	,, ,, 200
Sir Rickard Christophers, F R S (By courtesy of Messrs Lafayette.)	,, ,, 211
Sir James Graham	,, ,, 228
Sir Gordon Jolly	,, ,, 243
Sir James Bennett Hance	,, ,, 250
Title page to Fryer's " New Account of the East Indies and Persia " (1698)	,, ,, 276
(Reproduced from the copy in the India Office Library, by courtesy of the Librarian)	

The portraits of Sir Ranald Martin, Sir John McNeill, Sir Joseph Fayrer, Sir Ronald Ross, Sir William Edwards and Sir James Graham are reproduced from photographs hanging in the office of the Director-General, Indian Medical Service, in New Delhi. It is not known by whom the originals were made.

The official description of the cognizance granted to the Service in 1918 which is shown on the cover of this book was given in India Army Order No. 731, dated 20th August of that year.

“ *On collar of tunic.*—Within two laurel branches (gold) a Star of eight points (silver) surmounted by a Garter (gold) bearing the motto of the order in letters of gold and enclosing an Esculapius rod in silver, the whole surmounted by an Imperial Crown proper, underneath, on a scroll (silver), the words “ Indian Medical Service.”

“ *On collar of service dress jacket.*—As for tunic collar but in bronze ”

BACKGROUND

The Invention of the Indies

THE INVENTION OF THE INDIES

From the remotest ages caravans had set out from China and the Indies to supply the barbarians of the West with those articles of culture and beauty which were needed to give a proper artistic direction to their infant civilisations. F. M. Ford, in his prophetic vision of the great Trade Route, saw it running along the 49th parallel, "like a jewelled belt all across the middle of the world known to the Ancients—to the supremely ancient peoples who as long preceded Greeks and Romans as Greeks and Romans shall have preceded our descendants of fifty thousand years hence"—and along this route travelling the merchants, from China to the Cassiterides, "at first with pack beasts, then, when the Great Route was smoothed down and set with small polished cobble-stones, with sleds—Then with caravans on wheels a whole city of Cathay moving down a swathe of the earth's middle," and with the merchants went great quantities of ivory, apes and peacocks, perfumes, silks and rare spices, gold, frankincense and myrrh.

Rome in the time of the Empire knew them well. Carcopino in his "Daily Life in Ancient Rome" relates how, "since the reign of Nero silk caravans had come by the land routes across Asia, then from Kashgar to the Black Sea, or else through Persia and down the Tigris and Euphrates to the Persian Gulf," with the result that "into the ports of Ostia and Portus poured the spices, corals and gems of India and the incense of Arabia, while the horrea piperataria near the Forum were piled with the supplies of pepper, ginger and spices conveyed there by the Arabs." Pliny, indeed, tells us that in his day the Romans spent more than a million pounds a year on spices, cosmetics and silks for the adornment of their women.

It has been considered that the "Periplus of the Erythrean Sea" (A. D. 100) gave early evidence of trade as far as Malabar, and even to the mouth of the Ganges at the head of the Bay of Bengal. That strange person, Cosmas Indicopleustes—traveller turned monk, and amateur geographer—writing, from his monastery in Sinai in the sixth century A. D., his "Topographia Christiana" mainly to controvert the pernicious and anti-Christian doctrine that the world was round, tells how he sailed the Red Sea and the Indian Ocean, visiting Abyssinia and Socotra, the Persian Gulf and even India and China. He speaks of brass-ware and cotton materials, of musk and spikenard, of cloves, nutmegs and sandal wood, and the silks of China (trans. McCrindle, Hakluyt Society, 1897).

THE ARABS

In the ninth and tenth centuries the tale was continued by the Arab travellers Suleiman of Bussorah and Abu Zaid of Siraf on the Persian Gulf, whose adventures,

recounted in the eighteenth century by the Abbé Renaudot, incidently furnish us with the first Western references to tea and porcelain. It was, however, the fourteenth century which saw the peak of Arabian exploration in the journeyings of Ibn Batuta of Tangiers, one of the greatest travellers of all time, who, in twenty-four years, covered most of the East in his wanderings across Africa, through Central Arabia to Syria, over the Indian Ocean, and the Black Sea. Travelling then in the suite of the daughter of the Emperor Andronicus, wife of Usbek Khan of Kipchak on her journey home to persuade her parents to free her from the intolerable boredom of such an uncongenial alliance, he visited the Crimea and Constantinople. He continued to Bokhara, and through India to Delhi, where he remained eight years, at the end of which time he was sent on an embassy to China by the Sultan Mohammed Tughlak. From the farthest East he began to turn homewards by the coasts of Malabar, through Persia, Syria, Mecca and Egypt. Not yet satisfied with travel, he journeyed for a further six years through Central Africa and Spain. He described the trade of the various countries through which he had passed, mentioning Zaitun (Chincheu) in China, Sudak (Soldaia) in the Crimea, Calicut in India, Alexandria and Cairo as being considerable centres of trade, and speaks of the great ships which found harbour at Aden at the end of their long voyages from Guzerat and Malabar and even from Cathay. The account he gave of his travels, though those were so extensive and so lively, created little interest in the West. The story was, in fact, not translated into any European language until 1808 (see "Four Pilgrims," Boulting, Trubner's Oriental Series N D.)

VENICE

Meanwhile there had arisen on the North Italian lagoons a power which, once established, was to hold the seas for seven hundred years. A free interpretation of that phrase of Cicero—*Qui mare teneat, cum necesse rerum potiri*—might read that the power which would command the spice trade must first command the seas, for, indeed, the year 450, or thereabouts, which marked the foundation of the city of Venice, marked also the beginning of the great struggle for that trade which has continued almost up to the present time and involved in one way or another most of the great nations of Europe.

Flying from the ferocious vengeance of Attila, the first of the Great Huns of history, certain citizens of Padua and its neighbourhood had sought refuge in the islands of the lagoons at the mouth of the river Po there to live, concealed, the life of ancient lake dwellers. For every thing except safety they were dependent upon the mainland. Necessity forced them to become sailors and, as their seamanship improved, to become a sea power. From Constantinople they learned the building of tall ships with which they first subdued the Adriatic pirates, and then established trade with the nations around the Eastern Mediterranean basin. In order to be in a position to purchase the choice silks and spices of the Far East from those nations they were compelled to expand and produce, and so Venice, as she arose and grew in

beauty, at the same time developed into a great factory of rare glass, cloth, armour and many other articles of fine craftsmanship.

By 826 Venice was fully established and throwing out feelers over the lands of Europe as well as over the seas. So successful were its inhabitants in the first of these ventures that, by the thirteenth century, the cash of all Europe was in their hands. At that stage some need must have been felt for a ghostly blessing on their undertakings for we read that —

The crowds of pilgrims resorting to Rome to visit the tombs of the martyrs, and to kiss the Pope's toe, had suggested to the government the idea of fairs which were held within the city at stated times. The Venetians established a rival fair in honour of St. Mark, whose remains, revered even by the Moslems, had been smuggled out of Alexandria in a basket of pork. They took their materials, like Moliere, wherever they could find them—stole the corpse of a patriarch from Constantinople and the bones of a saint from Milan. They made religion subservient to commerce; they declined to make commerce subservient to religion. The Pope forbade them to trade with infidels, but the infidel trade was their life. *Sidmo Veneziani poi Cristiani*, they replied. The papal nuncios arrived in Venice and excommunicated two hundred of the leading men. In return they were ordered to leave the town.*

During the long period of the crusades (1096-1272) Venetian ships were made available, at a price, to transport and provision those warriors hot with desire to get to grips with the unbeliever, when, as William of Malmesbury said, the Welshman left his hunting, the Scot his fellowship with lice, the Dane his drinking party and the Norwegian his raw fish to join in those holy wars. The contacts they obtained, especially with Alexandria and Constantinople, allowed the Venetians, by degrees, so to monopolise the Eastern trade that "Venice became the nutmeg and pepper shop of Europe, not a single dish could be seasoned, not a tankard of ale could be spiced, without adding to its gains. The wealth of that city soon became enormous, its power, south of the Alps, supreme."

There is no doubt that it was the struggle for the possession of the trade in spices, choice woods and drugs, which compelled the Venetians first to fight and defeat the Genoese at Chioggia in 1380 and later to join the Spaniards in defeating the Turks at Lepanto in 1571. Genoa had actually been the first in this field and had drawn on the over-land trade from India by Persia and the Black Sea. She was therefore more hardly hit by the fall of Constantinople in 1453 than Venice, which had preferred the sea trade by way of Alexandria and Aden, and thereby kept control during the period between the fall of Constantinople and the conquest of Egypt by the Turks in 1517. That ascendancy was aided by her possession of Cyprus. Under her tutelage Famagusta at first rivalled and eventually superseded Alexandria as the clearing house for all the rarities coming from the East, until it, in its turn, fell to the Turks in 1570. It is worth noting that, during those days the Medici, fishing as always in troubled waters, obtained for Florence a not inconsiderable share in this traffic.

* The extracts quoted in this chapter, unless otherwise acknowledged are from Winwood Reade's "Martyrdom of Man" (see Appendix 4)

As the precarious nature of their hold on the spice trade was borne in upon the interested nations, they sought other means of ensuring the continued possession of so satisfactory and lucrative a form of merchandise. This problem they approached in two ways. Firstly they explored the possibility of an arrangement with the Tartars by which the trade along the land route might be maintained and, later, they investigated the feasibility of the circumnavigation of Africa.

Europe, which had already endured invasion by Goths, Vandals, Huns, Avars, Slavs and finally by the Turks during the previous eight centuries had, in the thirteenth century, to stand up to the last and possibly the most formidable of all those inroads. Jengiz Khan and his descendants, having overrun Persia, Russia and Poland, now threatened Germany and Palestine with invasion. Pope Clement IV, fearing that the Holy Places, which the Christians had, with such difficulty, wrested from the Saracens, might again be torn from them, dispatched two Franciscan friars to the headquarters of the advancing hordes to persuade them of the unreason of their attempts at world conquest. At about the same time, also, the sainted Louis, not to be outdone in matters of courtesy, sent out another friar—William de Rubruquis—who, after extensive wanderings with but meagre results, complained to his sovereign on his return that it was useless to send, as ambassadors to the Great Khan, poor monks without proper credentials, gifts, or any of the well-known essentials for obtaining the favour of Eastern potentates.

After the monks went the merchants—headed by the incomparable Marco Polo (1271) who, with his father and uncle, Nicolo and Maffeo, took up the tale of the marvels of India where Cosmas had dropped it in the sixth century. Their journeyings and the wonders which they described are doubtless familiar to most readers, but the full implications of those disclosures permeated but slowly into the understanding of their contemporaries. They reached, however, two of the men of destiny and moved them to set out and achieve great things. One was Prince Henry of Portugal, whose speculations will be later described, the other was Columbus, the Genoese, to whom, with a realisation of the immense distances of the Eastern Empire, came the thought that no great width of waters could lie between Europe and the Eastern borders of Asia. Filled with the expectation of a short and successful journey, he set out in 1492 to find the faery lands of Cathay, of Chipangu (Japan) and Chamba (Cochin China) and to possess the wealth of the fabulous Indies.

By that time trade with the East had come to a standstill, as the overland route was largely cut off, and the sea route not yet possible. The appetite of the West was whetted by the full and colourful details with which Marco Polo had embellished his story, and it was prepared to accept any unlikely tale that could give it satisfaction. Prominent among these were the adventures of that incredible masquerader, Sir John Mandeville, whose story is so outrageous that he may not be believed even when he appears to be telling the truth. He told the middle ages not of facts which it was necessary for them to know, but of marvels which they would like to believe,

as, for example, his sixty-second chapter which describes "a great yland called Dodyn, where are many diverse men of evill conditions"

"And in another yle are foule men that haue the lippes aboute the mouth so greate that when they sleepe in the sonne, they cover all their face with the lippe. And in another yle are lyttle men as dwarfes, and haue no mouth but a lyttle rounde hole and through that hole they eate their meate with a pipe, and they haue no tongue and they speake not but they blow and whistle and so make signes one to another. And in another yle are men with hanging eares unto their shoulders. And in another yle are wild men with hanging eares and haue fecte lyke an hors and they run faste and they take wild beastes and eate them. And in another yle are men that go on theyr handes and fecte lyke beastes and are all rough and will leape upon a tree like cattles or apes. And in another yle are men that go euer upon theyr knees mercaylosly, and haue on every foote viii Toes. Many other manner of folke bee in the sea in yles there about, of whome it were to longe to tell all."

In 1395 Timur the Lame, Khan of the Chagatai, broke out of the Fast from Samarcand, his chief city, and, after overrunning Persia, threatening Russia and invading India, turned his attention to the Turks, with such success that he defeated their Emperor Bajazet at the battle of Angora in 1402. This resounding defeat of the "Unspcakable Turk" enlisted for Timur the sympathies and even the affections of the Most Christian Monarchs of Europe. Embassies even travelled to his court from Spain, the records of which, as related by Don Ruy Gonzales of Clavijo (trans. Markham, Hakluyt Society) throw considerable light on the trade that then existed through Persia with India—"great caravans loaded with cloves, nutmegs, manna, cinnamon, mace and other choice spices, silks, cottons and taffetas. From Cathay came ships, having navigated the Western Sea, bringing pearls and rubies from Ceylon and spices from India." In the Hakluyt Society's volume "India in the 15th Century," may be read the accounts of other notable Eastern travellers—Abd-ur-Razzak, Conti, and Santo Stefano, as well as the Russian Athanasius Nikitin—while Ludovico di Varthema of Bologna, who incidentally was the first European Christian to visit Mecca, made a full survey of the potentialities of the Eastern Trade (1503-08) at the time when the circumnavigation of Africa was about to change the whole course of history ("Itinerario" Trans. Badger, Hakluyt Society, 1873.)

As the fall of Constantinople ruined the trade of the Genoese, so did the discovery of the way by the "Cape of Storms" to the "Island of the Moon" (Madagascar) affect the trade of the Venetians. Already men's minds were awakening to the possibility of a sea route to the East, by means of which the menace of the Tartars and the difficulties of attempting to reach it by land could be avoided.

PORTUGAL AND SPAIN

The year 1394 saw the birth of the fourth son of King John of Portugal and Queen Philippa his wife, the eldest daughter of John of Gaunt, himself the son of Edward III of England. That prince, known to history as Prince Henry the Navigator, having his mind continually inflamed by stories of incredible wealth waiting beyond the mountains of Morocco, turned early to ideas of conquest and aggrandisement.

furnished with unlimited funds by virtue of his office as Grand Master of the Order of Christ, he considered himself fully justified in expending such funds towards the conversion of the benighted heathen who guarded those treasures. He entrenched himself in a lonely castle at the extreme south-west corner of Europe (Cape Sagrez) whence he could gaze upon the unknown and still unravished waters of the Atlantic and fill his mind with fantastic dreams of what lay beyond, while his learned men, assembled within for the study of astronomy, mathematics and cosmogony, rifled the store of all classical knowledge in their attempt to solve the problem of the way thither.

Finally, in the year of grace 1410, at the conclusion of such vast labours, with every sail emblazoned with the cross of Christ, his ships

“ Sailed down the coast of the Sahara, on their right was a sea of darkness, on their left a land of fire. The gentlemen of the household who commanded the ships did not believe in the country of green trees beyond the ocean of sand. Instead of pushing rapidly along, they landed as soon as they detected any signs of the natives—the old people of Masinissa and Jugurtha—attacked them crying, Portugal! Portugal! and having taken a few prisoners, returned home. In every expedition the commander made it a point of honour to go a little farther than the preceding expedition. Several years thus passed, and the Black Country had not been found. The Canary Islands were already known to the Spaniards, but the Portuguese discovered Porto Santo and Madeira. In the meantime the expeditions to Africa became exceedingly unpopular. The priests declared that the holy money was being scandalously wasted on the dreams of a lonely madman. That castle on the Atlantic shore, which will ever be revered as a sacred place in the annals of mankind, was then regarded with abhorrence and contempt. The common people believed it to be the den of a magician, and crossed themselves in terror when they met in their walks a swarthy, strong-featured man with a round barret-cap on his head, wrapped in a large mantle, and wearing black buskins with gilt spurs. Often they saw him standing on the brink of the cliff gazing earnestly towards the sea, his eyes shaded by his hand. It was said that on fair nights he might be seen for hours and hours on the tower of Babel which he had built, holding a strange weapon in his hands and turning it towards the different quarters of the sky.”

Yet the researches of that “lonely madman” eventually laid open the seas of all the world to discovery. In 1444 a Bull of Pope Eugenius IV gave to Portugal the possession of all the lands which might be discovered as far as, and including, the Indies. The prince had even then the idea that, if he followed the coast of Africa, he would eventually reach the Indies and, in fact, though he himself died in 1460, the Cape Verde Islands (1446) and Sierra Leone (1463) were in turn discovered and, finally, the “Cape of Storms” itself was rounded by Bartholomew Diaz in 1487. Herodotus had long before recorded that, about 600 B.C., the Pharaoh Neko had dispatched an expedition from Suez which, after three years voyaging, returned to Egypt by the Straits of Gibraltar and the Mediterranean, having performed the journey round Africa, but all recollection of that event had passed from the memory of mankind. The name of the “Cape of Storms” was later changed by John of Portugal to the “Cape of Good Hope” in token of his lively expectation of acquiring the wealth of India.

Meanwhile, as access from the East was denied to all other nations than Portugal, Columbus had, as we have mentioned, been considering the possibility of an approach from the West. It was while he was putting those ideas into execution that he incidentally rediscovered America, the possession of which was promptly confirmed to Spain by a Bull of Alexander VI, himself a Spaniard, in 1493, together with all lands one hundred leagues westwards of the Azores. The Portuguese still held all lands eastwards of that line. Those Bulls dividing the world were almost the last great acts of Rome in her capacity as Mistress of the World.

These experiments by Spain in world conquest so stimulated His Majesty of Portugal that in 1497, he dispatched Vasco da Gama with the insistent instruction that he should, at all costs, discover India by the route of the "Cape of Storms" before the Spaniards could do any further damage. To make quite sure that these schemes did not miscarry, Pedro de Covilham was also dispatched by the land route, with instructions to find out how the Venetians had worked the spice trade, and, if possible, to stake out a claim.

"Covilham went to Alexandria in the pilgrim's garb, but instead of proceeding to the Holy Land he passed on to Aden, and sailed round the Indian Ocean or Green Sea—that lake of wonder with the precious ambergris floating on its waters and pearls strewed upon its bed, whitened with the cotton sails of the Arab vessels, of the Gujrat Indians, and even of the Chinese, whose four-masted junks were sometimes to be seen lying in the Indian harbours with great wooden anchors dangling from their bows. The east coast of Africa as low down as Madagascar—or the Island of the Moon—was lined with large towns in which the Arabs resided as honoured strangers, or in which they ruled as kings. On this coast Covilham obtained information respecting the Cape. He then crossed over to the India shore, he sailed down the coast of Malabar from city to city and from port to port. He was astounded and bewildered by what he saw—the activity and grandeur of the commerce, the magnificence of the courts, the half-naked kings blazing with jewels, saying their prayers on rosaries of precious stones, and using golden goblets as spittoons, the elephants with pictures drawn in bright colours on their ears and with jugglers in towers on their backs, the enormous temples filled with lovely girls, the idols of gold with ruby eyes, the houses of red sandal wood, the scribes who wrote on palm leaves with iron pens, the pilots who took observations with instruments unknown to Europeans, the huge bundles of cinnamon or cassia in the warehouses of the Arab merchants, the pepper-vines trailing over trees, and drugs which were priceless in Europe growing in the fields like corn."

Da Gama sighted the coast of Malabar on 17th May, 1498, and, on Sunday, the 20th May, cast anchor at Calicut, where he at once established a factory. He was back in Lisbon by September, 1499, bearing a letter from the Zamorin to the King of Portugal "written with a pen of iron on a golden leaf" which read as follows. "Vasco da Gama, a gentleman of thy house, came to my country, of whose coming I was glad. In my country there is plenty of cinnamon, cloves, pepper, and precious stones. The things which I am desirous to have out of thy country are silver, gold, coral, and scarlet."

"That night," as Reade graphically puts it, "The Venetian ambassador sat down and wrote to his masters that he had seen vessels enter Lisbon harbour laden

with spices and with India drugs His next letter informed them that a strong fleet was being prepared, and that Vasco da Gama intended to conquer India The Venetians saw that they were ruined ”

When the Portuguese at last, as Birdwood says, “ burst into the Indian Ocean like a pack of hungry wolves upon a well-stocked sheep-walk,” it was vital to them that they should immediately seize the great trading centres of Calicut, Ormuz, Aden and Malacca through which the Arabs had worked for so many centuries. The first years of their conquest, which open the second act of this great drama, are described by Reade in words that can hardly be bettered

“ The achievements of the Portuguese were stupendous—for a time They established a chain of forts all down the western coast of Africa and up the east coast to the Red Sea, then round the Persian Gulf, down the coast of Malabar, up the coast of Coromandel, among the islands of the Archipelago, along the shores of Siam and Burma to Canton and Shanghai, With handfuls of men they defeated gigantic armies, with petty forts they governed empires But from first to last they were murderers and robbers, without foresight, without compassion Our eyes are at first blinded to their vices by the glory of their deeds, but as the light fades their nakedness and horror are revealed We read of Arabs who had received safe conducts, and who made no resistance, being sewed up in sails and cast into the sea, or being tortured in body and mind by hot bacon being dropped upon their flesh, of crocodiles being fed with live captives for the amusement of the soldiers, and being so well accustomed to be fed that whenever a whistle was given they raised their heads above the water We read of the wretched natives taking refuge with the tiger of the jungle and the panther of the hills, of mothers being forced to pound their children to death in the rice mortars, and of other children being danced on the points of spears, which it was said was teaching the young cocks to crow The generation of heroes passed away, the generation of favourites began Countries accepted offices in the Indies with a view to extorting a fortune from the natives as rapidly as could be done It was remarked that humanity and justice were virtues which were always left behind at the Cape of Good Hope by passengers for India It was remarked that the money which they brought home was like excommunicated money, so quickly did it disappear And as for those who were content to love their country and to serve their king, they made enemies of the others and were ruined for their pains Old soldiers might be seen in Lisbon wandering through the streets in rags, dying in the hospitals, and crouched before the palace which they had filled with gold Men whose names are now worshipped by their countrymen were then despised Minds which have won for themselves immortality were darkened by sorrow and disgrace In the island of Macao, on the Chinese coast there is a grove paved with soft green velvet paths, and roofed with a dome of leaves through which even the rays of a tropical sun cannot pierce In the midst is a grotto of rocks round which the roots of gigantic trees clamber and coil, and in that silent hermitage a poor exile sat and sang the glory of the land which had cast him forth That exile was Camoens, that song was the *Lusiad* ”

Space does not permit details of the successive voyages by which the Portuguese later consolidated their power under the terrible Albuquerque, or of the unsuccessful attempt by the crafty Venetians to bolster up the Pseudo-Caliph of Egypt in an attempt to dispute with Portugal the Empire of the East, in ships built with timber transported with great difficulty overland from Alexandria to Suez

“ The Indian Ocean became a Portuguese lake There was scarcely a town upon its shores which had not been saluted by the Portuguese bombardiers Not a vessel could cross its waters

without a Portuguese passport. As a last resource the Venetians offered to take the India produce off the king's hands, and to give him a fair price. This offer was declined, and Lisbon instead of Venice became the market place of the India trade."

Goa was captured by the Portuguese in 1510, and the first Portuguese visited Bengal in 1518. In 1537 they erected a fort at Hughli and by 1575 had established there a regular settlement. This fort was captured in 1632 in the reign of Shah Jahan and the survivors taken as prisoners to Agra, but Portugal continued to hold ports on the West Coast in the region of Goa, which city is still in their possession.

So complex was the mediaeval soul that it found no difficulty in harbouring a ferocious lust for treasure in company with a spiritual yearning for the establishment of the Earthly Paradise. Cosmas Indicopleustes, in spite of his peculiar notions regarding the shape of the earth, had long ago given form to this idea.

"If Paradise were really on the surface of this world, is there not many a man among those who are so keen to learn and search out everything, that would not let himself be deterred from reaching it? When we see that there are men who will not be deterred from penetrating to the ends of the earth in search of sill, and all for the sake of filthy lucre, how can we believe that they would be deterred from going to get a sight of Paradise?"

Behind the long history of the struggle for the spice trade must always be seen also this quest. Columbus, who held the view that the earth was shaped like a pear, considered that, at the apex of the pear, lay the kingdom of Paradise, somewhere in the neighbourhood of China, and it was that, and not America, which he really set out to discover. Prince Henry, as we have seen, found no difficulty in satisfying his conscience regarding the disposal of the funds of the Order of Christ, if only the heathen were benefited spiritually while he was amassing the treasure.

Meanwhile, the Spaniards, exploiting to the full their portion of the Papal share-out, received a stroke of good fortune when, one day in 1513, Vasco Nuñez de Balboa suddenly and by chance, from a peak above his colony in Darien, saw the boundless waters of the Pacific Ocean stretching out before him. Having knelt upon the summit for some time in awe and amazement at the wonder of what he saw, he descended to wade in up to his waist and proudly, if rather absurdly, with drawn sword to claim its allegiance to Aragon and Castile.

Seven years later (1520) Magellan, rounding the Virgin's Cape, between Tierra del Fuego and the mainland, entered the Pacific. Though Magellan himself was killed in a skirmish in the Philippines his expedition reached Borneo in July, 1521, and the Moluccas in November of that year. On the return journey, as only two ships then remained, the *Trinidad* was sent back by Panama and round the Horn, while the *Vittoria* crept cautiously up round the Cape of Good Hope to reach San Lucar on 6th September, 1522, after nearly three years' sailing. This ship was the only survivor of the five ships that had set out. It had, for the first time, circumnavigated the globe, and incidentally given the final proof that Cosmas was wrong in holding so persistently to his theory that the world was flat—a heresy which his writings

had bound upon geographers for nearly a thousand years. The dispute as to the ownership of the Spice Islands was settled by Spain taking the Philippines and Portugal the Moluccas, until such time as their possessions were united under Philip II in 1580. At that time cloves, gathered in the Moluccas, sold in London for eight hundred times their cost. It is small wonder that the story of the adventurers who opened up this trade is drenched with blood.

HOLLAND

The next century saw the waning of Spain and Portugal and the rise of Holland and England as world powers. The Dutch had for centuries, first through Venice, and later through Lisbon, obtained the spices they required for themselves and for distribution through Northern Europe but when, in 1580, they revolted against the oppression of the Spaniards, Philip II forbade their merchants to trade with Lisbon. As Europe needed spices and the Dutch were the middle men who supplied them, they had no option but to go and get them themselves, which they did with such success that, by 1648, they were actually in the position to compel the Spaniards to trade with the East only by way of Cape Horn. In this dramatic rise to power they were largely aided by the shattering blow given to Spain when the Invincible Armada was destroyed in 1588. We have not the space to dwell here on the ups and downs of the campaigns by which the Dutch gradually forced the Portuguese to abandon one station after another. The first Dutch Company to trade with the East was founded in 1595 when four ships under Cornelius Houtman set sail and reached Java in 1596. During 1604-05 they set up factories in Java and Ceylon. Their first Indian factory was founded at Pulicat in 1610, followed by factories at Masulipatam, Negapatam, and Pettapoli, and finally at Surat in 1616. They first visited Bengal in 1625, where, after the Portuguese were driven out, they settled in Hughli in 1632. In 1619 they had assumed the sovereignty over Java, about the time that their kinsmen on the other side of the world were founding that city which was afterwards to be named New York. We shall later touch on their clashes with the British in the settlements.

Birdwood gave it as his considered opinion that the Dutch lost the trade through the narrow and exclusive spirit in which they pursued it.

"If the Dutch," he says, "instead of doggedly secluding themselves within their own green 'polders,' had opened up their canals to German commerce, and their Indian colonies to German emigration, and had identified German interests with their own, they would have maintained their supremacy on the seas, and probably supplanted us in the Empire of the East."

THE FRENCH

In 1503, in the reign of Louis XII, certain merchants of Rouen fitted out two ships to sail to the East. These disappeared and no further expeditions were dispatched by the French until 1604 when Henry IV granted a charter to a Company

proposing to trade with the Indies. The proposal came to nothing and it was not until 1668 that "La Compagnie des Indes" established their first factory at Surat. Under various concessions other factories were established at Masulipatam, at St. Thome near Madras, at Pondicherry, and at Chandernagar. In 1701 Surat was abandoned, Chandernagar was placed under Pondicherry and this later became, and still remains, the headquarters of the French in India.

THE DANES

A Danish Company was formed in 1612 and their first ship reached Tranquebar in 1616, where the Captain obtained a concession of land from the King of Tanjore. A later settlement was established at Hughli and, in 1755, a final factory set up at Serampur. In 1845, the Danish possessions in India were sold to the British for twelve lakhs of rupees (present value roughly £90,000).

Certain mushroom companies are mentioned by Bidwood, which, though of a later date, will be referred to here for the sake of completeness and to show the prevailing anxiety on the part of all nations for a share in this Golconda.

In 1617 James I granted a patent to Sir James Cunningham for a "Scottish East India Company" which collapsed the next year. In 1695 William III, it is said with a wish to wipe out memories of the unfortunate affair at Glen Coe, permitted the incorporation for twenty-one years of "The Company of Scotland trading to Africa and the Indies." That Company did not survive its first venture.

The Emperor of Austria, in 1723, incorporated the "Ostend Company," which "after passing through a very trying existence" became bankrupt in 1784. From the servants of that Company, thrown out of employment, in 1731, a Swedish Company was formed which existed chiefly by smuggling tea into Great Britain until, in 1784, the British Parliament lowered the tax on tea and that Company also went into bankruptcy.

Other ventures equally ephemeral were the Spanish "Royal Company of the Philippines," the Prussian "Asiatic Company," and "Bengal Company" and the Austrian "Imperial Company of Trieste for the commerce of Asia."

ENGLAND

The English started late on this vast treasure hunt and, when they did start, their first attempts were made from the North, as that appeared to them to be the only practical way of competing with the mighty hold of Spain and Portugal on the Western and Eastern approaches guarding the Spice Islands. Besides, as Master Robert Thorne (1527), whose father discovered Newfoundland and thereby, as Purchas suggested, may possibly have anticipated Columbus in the Americas, very justly pointed out —

"Though we went not to the said islands, for that they are the Emperor's, or King's of Portugale, we should by the way, and coming once to the line equinoctial, find lands no less rich

of gold and spicery, as all other lands are under the said line equinoctial, and also should, if we may pass under the North, enjoy the navigation of all Tartary, which should be no less profitable to our commodities of cloth, than these spiceries to the Emperor and King of Portingale "

It was, he considered, only a matter of courage To a man with the right spirit there was " no land uninhabitable, nor sea innavigable " Master Thorne, who informs us that " as some diseases are hereditary, so have I inherited an inclination of discovery from my father," had prepared for His Majesty's Ambassador in Spain to illustrate his theories a " little Mapped or Carde of the worlde the whiche I feare mee shall put your Lordshippe to more labour to understande then mee to make it, only for that it is made in so little roome that it cannot be but obscurely set out y^t is desired to be seene in it, and also for y^t I am in this science little expert " (See the map reproduced opposite page 3)

In 1496 Henry VII had granted patents to John Cabot to fit vessels out for the discovery of a north-west route to India In 1553 Sir Hugh Willoughby set off on the same search, to be followed by Sir Martin Frobisher in 1576, 1577 and 1578 and John Davis in 1585 and 1587 By that time a habit had been formed, and there was actually established in London a " Fellowship for the Discovery of the North-West Passage " Even after the die had been cast and England had embarked upon the long conflict with Portugal and Holland to wrest from them the spice trade by way of the Cape, attempts still went on and men were still

" moved wth great hope that ther is a possibility of discovery of a neerer Passage into y^e said East Indies by seas by y^e way of the North-West y^t the same were vnderaken by a man of knowledge in Navigacon "

Such an one, indeed, was Captain Waymouth who, in 1602, endeavoured to persuade the East India Company, who had lost money in his first attempt, that he would now surely succeed in discovering the way by sailing towards what he quaintly described as " Y^e backside of America " But the Company, having by that time been persuaded that, though the route by the Cape might indeed be long and dangerous, yet it gave satisfactory dividends, were not inclined to support such a problematical proposition The project failed even more quickly than had its predecessors

Tentative attempts had, meanwhile, been made by the English to reach the desired goal by land In 1557 Anthony Jenkinson and Richard and Robert Johnson set out for Russia to discover a workable route to India Their expedition was followed by others in 1561, 1565, 1566 and 1571, but, in all cases, it was found not to be possible to compete with Portugal The " Turkey and Levant Company," founded in 1581, made contact, through their merchants, with Agra, Lahore and Malacca, but no practical results followed those visits The honour of being the first Englishman actually to visit India belongs, according to legend, to Sigheimus of Sherborne, who was sent by King Alfred in 883 to Rome with offerings for the Pope and continued his journey to India in order to visit the shrine of St Thomas

1500. If it was to be allowed, then the honour must go to Thomas Stephens who was the first European to become the Rector of the Jesuit College in Goa. Next came the famous sea merchant, four merchants, Ralph Fitch, James Newberry, Story and Leede, who fitted out an overland expedition for private trade. On their way to Goa they were promptly thrown into jail by the Portuguese until they had been accepted as good Christians. When released, Newberry was the only one to survive the overland journey. Fitch made an extensive tour through India, Burma, Siam, Malacca and Ceylon, returning to England in 1511, while Leede and Story entered the service of the Great Mogul.

Meanwhile, in 1577, Sir Francis Drake, in the course of his journey round the world, visited the Moluccas and arranged with the King of Portugal to purchase half of the whole of the clove production of that island for a fixed price. He established himself as the first person to open up the trade of the East Indies to the West. The first British attempt on a commercial basis was made in 1592 when two ships were fitted out by a Company largely sponsored by the East India Company, for voyage to Ceylon and the East Indies—the *Leicester*, commanded by John Lancaster, Admiral, carrying a Surgeon John Banester, the *Golden Hind*, commanded by Luke Ward, Vice Admiral, with Surgeon James Fotherby, the *Golden Hind*, with Surgeon Robert Mynden, and a small vessel, the *Golden Hind*.

The expedition ended in failure, getting no further than the Atlantic, but the three ships which have accompanied it have earned the distinction of being the first to have sailed across their lives and service to the East.

It was, however, the capture by Drake of the Portuguese carrack *Sr Philip*, in 1581, and the information obtained from the papers which thereby fell into the hands of the English, that finally decided the nation to embark wholeheartedly upon the *India* trade. Matters were quickly brought to a head when Philip II complained to the Pope that Drake, and Cavendish after him, had by their circumnavigation of the globe, been guilty of offending against Spain's ancient rights to the rule of half the world. The Pope, who took the reasonable view that the sea and air are common to all men, made the provocative reply that what was lawful for Spaniards was equally lawful for Englishmen. The result of that observation was the dispatch and subsequent defeat of the Invincible Armada, and the opening up to both Dutch and British vessels of the route by the Cape of Good Hope.

In 1591 certain merchants of London fitted out three ships—the *Penelope*, the *Merchant Royal* and the *Edward Bonaventure*, under the command of James Lancaster—for trading with the East or, if that could not be achieved, for chasing and harassing the Spaniards and the Portuguese. Bad fortune pursued this fleet, and it was only after surviving great perils that Lancaster himself returned to London without his ships, though he had, indeed, succeeded in visiting Nicobar and Ceylon.

In 1592 the capture of a full-sized Portuguese carrack, the *Madre de Dios*, returning from the Indies with a rich cargo of spices, jewels, silks, porcelain, cloth,

gold and rare carpets, inspired a memorial made to Queen Elizabeth in 1599 by the recently formed London East India Company. In formulating this memorial the Company were greatly assisted by a well-documented "Register of the whole government and trade of the Portuguese" which had been taken with the ship.

Sir Robert Dudley sent out, in 1596, three ships on his own account, but this whole expedition disappeared without a trace, together with letters which it carried from Queen Elizabeth to the Emperor of Cathay.

Finally, in 1599, the Dutch having raised the price of pepper against us from 3s. per pound to 8s., a meeting was held under the Lord Mayor of London on 24th September to agree upon an association for the purpose of establishing direct trade with India. The Queen sent Sir John Mildenhall to obtain from the Great Moghul the necessary permission to trade in his dominions and, on the 31st December, 1600, the East India Company was born and incorporated by a Royal Charter with the title of THE GOVERNOR AND COMPANY OF MERCHANTS OF LONDON TRADING WITH THE EAST INDIES, known to the Indians as Kampani Jehan (or company of the world), which quickly became transformed in English mouths into the homely "John Company."

Birdwood preserves a list of the principal imports from the East Indies into Portugal and Holland, prepared for the Company at its inception, as a guide to those goods which they might expect to receive from India. We reproduce it for the beauty of its words.

"The Comodities of the Este Indies"

"Sinemonde, pepercase, pepper callycowe (of Calicut), longe pepper, cloves, maces, nutmegges, ginger, mirabolanes in conserve, mirabolanes drye, grene ginger, nutmegges in conserve, swarmon water, camfyer, burrassie, gallingale, cardamante, red sandes (red Saunders wood), white sandes (sandalwood), tamoryndes (tamarinds), myrre, balsamum, momya (wax from mummies), masticke, peper in pickell, muske and syvitt, amber greise, amber blacke, Benjamyn syne, Benjamyn course, lignum aloes, blew Indea (indigo) lacrya to die wethall, hard wax, turbythe, radix china, illoies Sicotrinin, spignard, oyle of maces, rubarbc, goom appopanarc, gum Sclapin, gum Elemme, castorium, opium, tacamahaca, tutia, boill, Indies nuttes (cocoa nuts), silke in clothe, silke rawe, clothe of crya (herb), prynted clothes, callycow clothe, ocanazneñas bengallas, lymen clothe of finer sort than callycow clothe of goulde, pussellanas (porcelain) certain dishes and plates so called, targattes, flunnes, a stone called bazar (bezoar), diamondes, rubyes, saffiers, esmeraldes, pearles greate, scide of pearle, turkeis (turquoise), callimas armaticus (calamus aromaticus), incense, zedovra cubebes, quiltes of silke."

A note from Garrison's "History of Medicine" shows how much of the trade in spices was actually a trade in drugs.

"The extent to which exotic Eastern and American drugs were introduced is evidenced in the remarkable series of pharmacologic tracts published in London during 1672-95 and attributed in part to John Pechey of Gloucestershire. Moluca nuts, ginseng, Angoli seed, specacuanha, casuarar roots, Malabar nuts, Barbado seeds, Bermuda berries, Vanilla beans, salep, Colombo wood, Maldiva nuts, lingam nephriticum, Blatta bizantina, Bengala beans, Perigua, Mexico seeds, Calorian plant and cassiny are among these simples."

“ Torrents of blood,” he says, “ were shed for the ‘ apparently inoffensive clove ’ which to-day is mainly of value in seasoning pickles and preserves, or to conceal the odor of a drunkard’s breath ”

It was not for nothing that Sebastian Del Cano, who brought home to Spain the flagship of Magellan’s fleet, was granted by Charles V, in addition to a crest displaying a globe, with the motto “ *Primus circumdedisti me,* ’ the right to armorial bearings showing branches of nutmeg, cinamon and a clove

How much the British have owed to the universal appetite for these delicacies is well set out in Birdwood’s fine peroration in which he speaks of “ the character of the revolution wrought not only in the commerce and politics, but also in the whole moral and intellectual life of Europe by Da Gama’s discovery ”

“ Following immediately on the discovery of America by Columbus, it profoundly agitated the hearts and minds of the people of Europe. The rude multitude were stirred by an uncontrollable lust of riches and spirit of adventure, and the cultivated by the sense of renewed faith and hope in the divine deliverance of the world, at the moment when Christendom was almost sinking into the old despair of human destiny and duty that marked the decline of Imperial Rome. For all men the sphere of human intelligence and sympathy was permanently and indefinitely enlarged. The Spanish and Portuguese discoveries of the Indies were, for Europe indeed, nothing less than the revelation of a new moral world, and the definitive emancipation of the human soul from the ghostly trammels of its obsequious bondage to secular and religious dogmatism through all the dark centuries of the middle ages. Their quickening effect on the genius of Europe was at once made manifest. Da Gama’s discovery changed the face of Europe from the Mediterranean to the Atlantic, and the British Isles, which had before been wasting in the obscurity of their native fogs, were at once placed in the forefront of the new line of human advancement, and, as the geographical centre of the four continents of the globe, they became, in the course of the next two hundred years, the common emporium of the whole sea-borne merchandise of the world. The establishment of the East India Company was the first step in the prodigious political development of England under the rule of Oliver Cromwell and during the reigns of William III and Queen Anne, and, all through the great years that grew out of the French Revolution, it proved the chief corner stone of our unabated mercantile prosperity and naval supremacy ”

We will close this short account of the adventurous road travelled by those pioneers who opened up the spice trade with the following patriotic aspiration destined, alas, to fall upon deaf ears

“ The anniversary of the accession of ‘ the Most Mightie and Magnificent Empresse Elizabeth ’ continued to be kept as a public holiday in England even within the last century (XVIIIth), and it should still be so observed, at least in the India Office and in British India, and the State of Virginia, in praise perennial of Her Imperious Majesty’s heroic memory ”

“ *Cynthia prima fuit, Cynthia finis erit.* ”

“ Her deeds were like great glusters of ripe grapes
Which load the branches of the fruitful vine,
Offering to fall into each mouth that gapes,
And fill the same with store of timely wine ”

BEGINNINGS

SEVENTEENTH CENTURY

1600—The Founding of the East India Company.

John Woodall, First Surgeon-General to the Company.

The Development of the Western Presidency.

Early Settlements at Madras.

The Early History of the Company in the Bay.

A Note on the Minor Medical Services of the Company

Surgeons in the Service of the Princes.

A Note on Hospitals in India in the Seventeenth Century.

1600—THE FOUNDING OF THE EAST INDIA COMPANY

As we have already mentioned, it was on the 31st of December, 1600, that the Association of Merchant Adventurers, which had been formed in 1599, received its first Charter from Queen Elizabeth, which ensured to it for fifteen years the rights and privileges of the Eastern Trade. A second Charter was granted by King James I on 31st May, 1609, which made perpetual the privileges which had been established by the former.

The first fleet of the Company, under the command of Captain (later Sir James) Lancaster, set out for the East in December, 1600, "with foure tall ships." Captain Lancaster himself was on board the *Red Dragon*, Captain Middleton on the *Hector*, Captain Brund on the *Ascension* and Captain Howard on the *Susan*. Each ship carried "Surgeons twoe and a Barber," and the names of certain of those Surgeons have fortunately been preserved for us. In the *Red Dragon* was Ralph Salter, who received the sum of £32 sterling for the furnishing of his chest with "all kinde of necessaries and remedies belonging to a chirurgion." The Surgeons of the other three vessels were, respectively, James Lovering, Christopher Newchurch and John Gammond.

The chief interest of the Company in the period 1600-25 was with the East Indies, in which they included Burma, the Malay Archipelago, Siam and even China and Japan. There was, at that time, no vision of an Indian Empire. It was purely business, with the Dutch as their rivals, which spurred the Company, and this first voyage, which was attended by every good fortune, was not to India proper but to the Islands. It resulted in the founding of factories at Achin in Sumatra and Bantam in Java, in 1603.

In 1610 a factory was founded in Siam and numerous others were established in various places in the Indies during the next ten years. In 1621, the English and the Dutch having entered into some sort of an agreement to share the trade of the Islands, the British abandoned Bantam and settled at Amboyna, but the hatred and the struggle for domination still continued. In February, 1623, there occurred an episode which broke the power of the Company in the Islands, and led to their eventual withdrawal. In the words of Crawford —

"On February 11 Abel Price, Surgeon of the English Factory at Amboyna, was made prisoner in the Dutch Fort, charged with having attempted, when drunk, to set fire to a Dutchman's house. He was tortured, and under torture confessed to a plot, probably imaginary, on the part of the English, to attack and murder the Dutch. The English officials were seized. All were tortured, and on 27th February most of them were beheaded. The lives of a few were spared." 1

Representations against this breach of the "Treaty of Defence" were forwarded through the Ambassador at the Hague but no reparation was made. Dryden wrote up the massacre in an indifferent play, "Amboyna, or the Cruelty of the Dutch to

the English Merchants" (1673), directed to inflame public opinion against the Dutch, with whom we were then at war for a second time. Previously Cromwell, whose patience had become exhausted by the long accumulation of injuries sustained by the Company, had declared war on Holland in 1652. This war was prosecuted with such vigour that the Dutch were quickly forced to beg for peace. By the Treaty of Westminster (1654) they agreed to pay an indemnity of £85,000 to the Company and a further sum of £3,615 to the heirs and executors of those who had been murdered at Amboyna. Birdwood gives it as his opinion that the massacre of Amboyna, "by rousing the patriotic spirit of the whole country in support of the interests of the Company was the turning point in the history of the rise and progress of the British Empire in India". It has to be realised that, in their early days, the traders had no military defence in the majority of their stations. It was only in 1668 that the survivors of the Royal Garrison at Bombay, on the transfer of that Island from Charles II to the Company, volunteered to continue serving and were enlisted as the Honourable Company's First European Regiment, or Bombay Fusiliers, later to become the 103rd Foot.

The Company's hold on the Islands had never been strong and, in 1624, after the severe setback caused by the massacre, most of its factories in the Malay Islands and at Firando and Nagasaki in Japan were abandoned. The factory at Bantam, which was evacuated in 1620, was re-established in 1628, sacked by the Javanese in 1677, captured by the Dutch in 1682 and finally abandoned by the British who, thereafter, confined themselves as regards the Islands to their settlements in Sumatra, with headquarters at Bencoolen. Those settlements they retained up to 1825.

The factories in the Islands each had a Medical Officer, though often they must have been left without one owing to the time that would elapse for replacements to arrive. The quality was often in question, and frequently only apprentices were supplied.

"One!ie you are to paye no wage to Lawrence the Surgion and Edward Ellimore who be not their owne men but servants" 2

"The Surgeon's provisions and 'physical drugs' would be much more beneficial if there were a sufficient man to administer them, more need of a physician than a surgeon, and the one at present here (Batavia) is such a continual drunkard that nothing can reclaim him" 3

Life was hard and the men were tough. There were numerous charges of debauchery, and even of treason. In addition, there was always the possibility of a massacre such as that at Pulo Condore, off Cambodia, in 1704. In spite of all this it is related of a certain Mr. Cunningham that, having survived that massacre, he became head of the Company's affairs in Borneo, and that though "he was bred a surgeon, he had turned Virtuoso, would spend whole Days in contemplating on the Nature, Shape, and Qualities of a Butterfly or a Shell-fish and left the Management of the Company's Business to others as little capable as himself, so every one but he was Master."

PLATE II



JOHN WOODALL, FIRST DIRECTOR GENERAL

BEGINNINGS

It appears to have been in 1689 that the Company was first seized with the idea of an English Dominion in India, and the following resolution, undoubtedly first proposed by Sir Josiah Child, " Captain General and Admiral of India," is quoted by Birdwood

" The increase of our *revenue* is the subject of our care, as much as our *trade*, 'tis that maintain our force when so accidents may interrupt our trade, 'TIS THAT MUST MAKE A NATION IN INDIA, without that we are but a great number of interlopers, united by Majesty's Royal Charter, fit only to trade where nobody of power thinks it their interest to prevent us, and upon this account it is that the wise Dutch, in all their general advices that we have written ten paragraphs concerning their Government, their civil and military policy, warfare, the increase of their revenue, for one paragraph they write concerning trade "

Meanwhile, in 1698, William III had granted a Charter to a new Company the " English " Company as opposed to the original " London " Company. The London Company, having sensed this development had, in 1693, spent £90,000 in bribing the Privy Council to prevent the incorporation of this rival concern, but without success. According to Evelyn's " Diary," when the question came to a vote in 1698, " the old East India Company lost their business against the New Company by ten votes in Parliament, so many of their friends being absent, going to see a tiger baited by dogs " 1 After a few years of rivalry, the two Companies amalgamated in 1709, as the " UNITED COMPANY OF MERCHANTS OF ENGLAND TRADING TO THE EAST INDIES," commonly known, after that time, as the " Honourable East India Company."

JOHN WOODALL, FIRST SURGEON-GENERAL TO THE COMPANY

We are met at the very threshold of our narrative by the first of the many remarkable men with whom we shall become acquainted in these pages. John Woodall, who was appointed on 13th December, 1613, as the first Surgeon-General to the East India Company, was born in 1556. He served as Surgeon to Lord Willoughby's regiment in 1591, and thereafter spent seven years in Germany, Poland and France, partly in the study of medicine. It was during this time that he devised his *Aurum Vitæ*, as a cure for the plague, a preparation which he was able to put to good use during 1603 when he returned to practice at Wood Street, in London. In January, 1616, he was elected Surgeon to St Bartholomew's Hospital, the year in which Dr William Harvey delivered there the first of his lectures on the circulation of the blood, and in 1633 became Master of the Barber Surgeons Company which he had first joined in 1599.

In his own words his appointment as Surgeon-General

" reposed in him the credit and trust for ordering and appointing fit and able Surgeons, and Surgeons Mates for their Ships and Services, as also the fitting and furnishing their Surgerie Chests with medicines, instruments and other appurtenances thereunto, Which credit and weightie charge, so nearly concerning the lives of their servants reposed in him, instigated him to employ all his endeavours to answer their so great trust imposed on him " 4

Nevertheless, in spite of these fine sentiments, Woodall was in continual trouble. Accusations were made of gross abuses in the preparation of the new "Chirurgion's Chest" which he had devised, "drugs rotton, unguents made of kitchen stuff; boys that have no skill thrust into place of chirurgions. He is to be accounted guilty of the death of so many men as perish through his default."

Though most of the charges were unfounded and not pressed, there is no doubt that he appointed his apprentices to office as Surgeons of the Company and pocketed a portion of their pay. He admitted to having seven apprentices as Surgeon's Mates in the Indies from whom he took two months' pay yearly, and this arrangement was approved by the Court. Even though the annual salary of the Surgeon-General of £30 was equal to £300 now, it is not strange that he should have sought for means to increase that income. This he achieved partly by the provision of his Surgeon's Chests, as witness his anxiety to keep the contract and prevent other doctors from competing in this supply. He published directions regarding the preservation of health on board ship in "The Surgeon's Mate" in 1617 and in his "Viaticum, or Pathway to the Surgeon's Chest" in 1628. Those books were combined in 1639, into a "Manual of Military and Domestic Surgery," which included also his "Treatise on the Plague." When that work was published he was over eighty years of age and complained that "time hath overtaken me, having run through the cares of 69 years, old age being an enemy to study, for my sight being weakened, my memory much impaired and my capacity utterly unable to perform so hard a task." He claimed to have invented the trephine and, in the "Viaticum," gives a description of its use in military surgery.

The duties of the "Chirurgion-Generall" were set out in the "Lawes or standing Orders of the East India Company, 1621" (Library of India Office), from which it is interesting to learn that the Chirurgion-Generall and his Deputy "shall also cut the hayre of the carpenters, saylors, caulkers, labourers and any other workemen in the Companies yards and ships once every forty dayes, in a seemely manner, performing their works at breakfast and dinner times or in raynie weather, and in an open place where no man may loyter or lye hidden under pretence to attend his turne of trimming." For this service every employee was required to pay two-pence every month out of his wages to the Chirurgion-Generall. This was a valuable perquisite as it was the apprentices of the barber-surgeon who did the hair-cutting, while Woodall pocketed the two-pence!

As time went on we find life becoming increasingly hard for the Chirurgion-Generall. In 1628 his salary was reduced to £20 per annum and in 1633 it is recorded that he made a petition to the Company showing that it was then nearly three years since he had received any gratuity for healing their servants.

In 1635 the Company were in low water and, as part of the retrenchment which was then instituted, Woodall was discharged, though he still continued to hit out the Surgeon's Chests. Even in this duty he was often called in question, being asked, for example, on 9th November, 1642, "whether he did not new boyle

the salves again and so make the Company pay for them twice." He was eighty-six years of age and long past his work and, in fact, the next year (1643) he resigned. He made one last petition to the Company in June of that year in which they would be pleased towards the repaying of his languishing necessities better support now in his declining and dying days to bestow somewhat upon him.

The Committee "did by erection of hands deny to bestow anything upon him. They knew he was a miser and were satisfied that the old man was not so bad as he pretended.

"In 1643, August 28, old Mr. Woodall, the Surgeon, died."

It is permissible perhaps to be amused at old Mr. Woodall, with his hair-cut, his chests, and his struggle, as Director-General of the Service, to augment his income of £30 a year by means not too ethical, yet one can learn from his writings that he carefully considered the benefit of his patients and was, in many ways, in advance of his times, as for example in his observations regarding Scurvy —

"The Chirurgion or his Mate must not fail to persuade the Governor or Purser in all places where they touch in the Indies, and may have it, to provide themselves of juice of oranges, limes or lemons and at Bantam of Tamarinds, for these good helps which you shall find in the Indies do far exceed any that can be carried thither from England, and yet there is a good quantity of lemons sent in each ship out of England by the great care of the merchants, and intended only for the relief of every poor man in his need, which is an admirable comfort to poor men in disease. Also I find we have many good things that heal the Scurvy well at land, but the Chirurgion shall do little good at sea with them." 5

It was not until 1753 that James Lind, who had served in the Navy as a Surgeon, published his "Treatise on the Scurvy" and recommended the use of lemon juice in the treatment of that condition. Even then it was not until 1795 that the British Navy adopted the issue of lime juice as a routine on all ships, nearly two hundred years after Woodall had published his "Surgeon's Mate."

John Woodall was succeeded in his duties with the Company by his nephew, Henry Boone, who, however, was never appointed as Surgeon-General. He died in London in July, 1666, the year of the Great Plague. On his death, the Court having considered the question of a successor, it was decided that no appointment should be made, but that they would employ those who had applied "as they shall see fitt, or provide themselves where they best can, when they shall have any occasion" — a ruling which has a familiar ring in the ears of those who have served for any length of time the successors of John Company.

THE DEVELOPMENT OF THE WESTERN PRESIDENCY

The first factory which the Company set up in India was at Surat in January, 1613. During the next four years other factories were established at Broach, Barhampur,

* Lind recommended lemon juice, the Navy unfortunately substituted lime juice, not nearly as good an antiscorbutic, because it was readily available in the West Indies.

Agra and Ahmedabad The history of our possession of the Island of Bombay is of some interest In 1528 it had been acquired by the Portuguese who, in 1554, rented it in perpetuity to one Garcia da Orta, a physician who lived in India from 1534 to 1579, and who paid, for that concession, the sum of £85 a year Da Orta was the first physician from the West known to have practised in the East, to which he went in 1534 in the train of the Portuguese Governour He was born in 1490 at Elvas, famous for its plums and on the way to Badajos The great poet in exile at that time—Camoens—was his intimate friend He published at Goa, in 1563, his “Colloquies,” which may be read in the English translation of Markham (“The Simples and Drugs of India,” H Sotheran, London, 1913) The original was one of the earliest works on tropical medicine, and the third book ever to be printed in India. It is most illuminating for the light it throws upon the practice of medicine in those days. It is regrettable to have to record that both that enlightened man and his sister suffered at the hands of the Holy Inquisition—she being burned alive at the stake, but he only after exhumation, for he had at that time been dead two years (Friedenwald, *Bull Hist Med*, IX, 5, 1941)

The Island was eventually ceded by Portugal to England as part of the dowry of Katherine of Braganza, wife of Charles II, in 1661, and in 1669 was handed over by the King to the Company for £50,000 down and a rental of £10 a year

From 1629 to 1635, Surat was the chief centre of the activities of the Company in the East The seat of Government was transferred to Bombay in 1678, re-transferred to Surat in 1681, and back to Bombay in 1686, which town became thereafter the Headquarters of the Western Presidency and has remained so ever since

For a few years the Company's factories in Persia were almost as important as those in India The first factory in Persia was established in 1616 at Ispahan, and it is there that we meet George Strachan, a picturesque character who was medical officer to that factory from 1619 to 1621

Strachan was a native of Kincardine in Scotland, and the story of his life showed the spirit of adventure of his time and race He entered, in 1602, the Scots College at Rome, was in Constantinople in 1612, in Aleppo in 1615, and then took service with the Emir Feiad of Arabia Deserta, with whom he remained from 1615 to 1618 The year 1618 found him in Baghdad, and in June, 1619, he joined the Company's factory at Ispahan In May, 1620, he was accused of having poisoned the former Chief Officer of the Company at Ispahan, was dismissed but reinstated a few months later In October, 1622, he arrived from Ispahan at Bandar Abba, had a severe attack of fever and left again for Ispahan to pass, still travelling, out of the pages of history

“As for his language, which is Latine, french, Italian, Hebrue and greecke, but chiefly the Arab, wherein he is varie perfect, may be verry behonfull and much helping with the affaires of the Company” 6

His arrival with the Company was reported as follows.—

"Arrival of George Strachan, a Scottish Physician, who long lived with Iyant, King of those Arabs who inhabit the desert, from the confines of old Babylon to Aleppo, and was in such favour with the King that he gave him his brother's widow to wife, but hearing that it was the King's intention to force him to be of their diabolical sect he fled to Bagdad " 7

In a letter which he addressed to the Company, Strachan set out the advantages which would accrue to the Company if he were to be employed by them

"Having wide practice, which is the principal cause of his entertainment, not only can he serve the Company by his language in this place, but also by the friendship which he has with the Arabian and Arabian merchant in Babylon and Aleppo — Saved William Nelson two years since in burning together with his letter — Can also choose in the buying of all drugs which the country affords — Desires and hopes to obtain £100 a year " 8

In spite of the variety of his accomplishments, Strachan was not a success at Ispahan — The fact that he appears to have secured his £100 seems to have rankled with the regular in the service — The official Jelleries, who accused him of poisoning the Company's agent, wrote of him as follows —

"And Strachan our Antichristian Physician, for his flattering, lying, dissimulation, inconscient-ness, detraction of jurisdiction, with his tenthsbooks of decrees pennyworths of plasters and purges, cowardly detraction in the factory, his scandalous reports of poisoning the Company's servants as the late Agent and William Robyns, his discovering all the passages of our business of the freyers and physicians, th' which his confession and disloyall service to the Company, intercepting of their letters — How can he be otherwise, being married to a Moor in Arabia, from whom he took his runnagate language, leaving wife and family to prosecute the devill's commission in doing evil, continually depreth his owne country, and his church, and confesseth to have the dispensation of the Pope to dishonour his Religion in all his Pilgrimage Whose plague infection to remove from our factory (by irrevestible reasons to the Agent besides co'th the Company 100 l per annum), hath wrought him to set the devill, to make a compleate number of my capitall Adversaries " 9

On 4th March, 1621, orders were passed discharging this stormy petrel from the service of the Company

The Company evidently were of two minds in the early days as to the need for posting surgeons to each of their factories — We learn, for example, that in 1638 a surgeon was thought to be unnecessary at Ispahan, " as fevers and fluxes both in India and Persia are most familiarly cured by the natives of each or ether, to whome nor medicines nor skill is wanting " Also the suggestion, in 1625, that a surgeon should be added to the staff of the factory at Agra was turned down

In 1619, we read regarding an application from the factory at Broach —

"Your letter importinge the sendinge of our surgeon to your Governor was seconded by one from himselfe to the same effecte, whom we may very well spare for the small use we have of him in respecte of ourselves " 10.

Perhaps the reason for this readiness to dispense with his services may be found in a further paragraph of the same letter —

"We pry you further to have an especiall care to keepe him sober, that wee be not through

him generally skandallised by these infidells, which, excepte you looke very narrowly to him (if any stronge drinke be stirringe) you will hardly performe ” 11

From the time of their first arrival in India the English had been almost constantly at war with the Portuguese settlements. In January, 1635, the Agent at Surat made a treaty with the Viceroy at Goa, which was finally ratified, in May, 1642, by the treaty of peace between England and Portugal which has lasted to the present day.

Occasional sidelights are thrown upon the activities of the Company's surgeons, as for example the complaint that —

“ Your chirurgion's dyet of Burnt Wine to men sicke of the flux is by the physitians of this country held rather poysonous then cureable, which some of us in our own experience have found true ” 12

A study of the type of doctor usually taking service with the Company, and a consideration of the state of Western medicine at that time makes it hardly to be wondered at that the Company held the opinion that “ the ordinarie physick of the country will bee the best cure when any sicknesse shall overtake him ”

Dennis Kincaid, in his “ British Social Life in India,” informs us that, in that century “ It is probable that many of the deaths which pious travellers ascribed with gloomy relish to that accursed Bombay punch were really due to the ordinary diseases of the East aided by the antics of contemporary surgeons. The favourite method of treating cholera was, to apply a hot iron to the ball of the patient's foot, if he winced that was a proof that he would recover, if he gave no sign of pain then all hopes should be abandoned, and the doctor having delivered this diagnosis, pocketed his fee and drove round to the next patients house ”

Attempts were continually made to deal with the more unruly of the Company's doctors and in 1677 we find the Governors in London ordering that the Agent in Bombay “ doe send home ye petty Chirurgions, by whome you say ye Island is oppressed, give us an acct who these are and how they went out, you ought not to let any remayne on ye Island to ye Inconvenience of ye Inhabitants ”

It must not be thought that all the doctors were of this type. Some of them, as, for example, Dr John Fryer, well earned the description of being “ a skilfull and experienced artist in the profession ” Fryer was the best known and most respected of all the surgeons who served in the Western Presidency during the seventeenth century. Born in 1650, he took the degree of M.B. at Cambridge in 1671 and sailed for India in December, 1672, being posted to Bombay on a salary of 50s per month. He arrived in India on 9th December, 1673, and remained in Bombay for one year, was transferred to Surat in 1674, returned to Bombay in 1675 and served there for two more years. A flash from the *Bombay Diaries* of 23rd April, 1675, gives the following:—

“ Ordered that Mr John Fryer, Physitian, doe gett himselfe ready so soone as possible he can to go up to Juncah in order to the curing Muckles Ckaun's Neece, and that he be pd 125 Rups to bear his Charges which he is to endeavour to gett againe of Muckles Ckaun ”

PLATE III



JOHN IRVIE, I.R.S.
S. of the Prince of Wales

JOHN IRVIE, I.R.S.

PLATE III

The word "endeavour" is worthy of notice !

Liver was in Ispahan in 1677 and returned to Surat in 1678, where he was appointed Surgeon to the factory at Surat, after submitting an application based on the grounds of "Being forced by Sickness to leave Persia, and thereby both myself and servant Danell Trenchfield becoming destitute of employment, notwithstanding still retained in the honble Company's Service" He held that office for three years till he resigned and sailed for England on 19th January, 1682, reaching Lollaston on 26th August of that year.

He obtained the degree of M.D. at Cambridge in 1683, and, in 1697, was elected a Fellow of the Royal Society, being the first doctor of the Company to obtain that distinction. He died on 30th March, 1733. He related his travels in the East in a book published in 1698 under the title "A New Account of East Indies and Persia in Eight Letters, begun 1675 and finished 1681," which is a valuable guide to the customs prevailing at that time.

Crawford records the name of a large number of the Company's doctors of this century who are, and must remain, only names. The lists are largely imperfect and the date approximate. It is unfortunate that, while a virtuous life has usually gone unrecorded, so many details have survived only on account of misdoings, however picturesque they may have been. For example, Dr John Maxwell, appointed to the factory at Surat in 1700 and travelling in the exalted company of Lord Ambassador Sir William Norris, to Barhanpur in 1701, was eventually expelled from the Company's service in 1703 on account of his "lewd debauched life." After discharge, Maxwell went to Cochim, where he made a living by informing private of the movements of expected vessels.

There is also the sad story of the downfall of Dr. Stallworthy in 1686 who, as Crawford says, was possibly the first, but certainly not the last, member of the Service who has come to grief over a woman.

"Do not Stallworthy hath been for this many months so bewitched of Mrs Gape's black witch which rendered Him incapable of managing ye Hospitall, out of respect and kindness we have used all means to reclaim Him, but all is in vaine, and he still persists in his folly, in so much that none will trust their Lives in His Hands" 13

In this short sketch of the beginnings of the Service in the Western Presidency there remains only to be recorded the romantic story of Dr Gabriel Boughton, Surgeon of the *Hopewell*. This story, consisting partly of legend and partly of fact, has been subjected to exhaustive analysis and the following account is probably, in the main, authentic.

It is certain that Gabriel Boughton really existed and that he was surgeon of a ship named the *Hopewell*. The question of his appointment to, and connection with, the *Hopewell* was treated by Mr W Foster of the India Office in the *Indian Antiquary*, Vol XL, for September, 1911. This paper draws attention to a memorandum on the origin of English trade in Bengal dated 1684, in the course of which it is stated that —

“ About the year 1636, there was one Gabriel Boughton a chyrurgeon at Madrass in the time of Agent Cockaine who design'd home for England, and according took his passage upon the *Hopewell*, Captain Gage Commander, and near the Cape mett with very bad weather and in the storm the said ship spring a leak which to save themselves they threw overboard their lading, and made for the Moritious, where they arrived and mett with the ship *Dolphin*, Captain Proud commander, which ship in bad weather had lost her masts, at which place both ships being fitted they went for Suratt

“ Mr Boughton having lost all that he had, tarried at Surat during which stay Assut Channe, the Emperour's Buxy, writt to Suratt for a chirurgeon to come to court, the Emperour's daughter by accident having her clothese set on fire was burnt, for the cure of whom a chirurgeon was sent for Mr Boughton went and performed the cure, he was much made off and allowed 7 rupies per diem and invited to serve the Emperour, but Mr Boughton did not like to stay, and after some time travelled most part of India, and at last came down into Bengall The prince Shaw Sujah then residing at Rajamaule, Mr Boughton went thither, he had been there but a little while when he was taken notice off, by a great person that had seen him at the Emperour's court while he was performing the cure upon the Emperour's daughter, and at that time there was one of the princes concubines, which woman the Prince greatly loved, had a great pain in her side, and could find no cure The said great person acquaints the Prince that there was chyrurgeon in the town that had wrought a great cure on the Emperour's daughter, upon which the Prince sent for Mr Boughton who undertooke the cure and succeeded curing the woman in a very shorte time, upon which Mr Boughton was in very great favour and allowed by the Prince 10 rups per diem This Prince Shaw Sujah was the present Emperour's elder brother, and had given him by his father the government, and all the revenues of the provinces of Bengalla and Orissa, he offers Mr Boughton if he would trade, he should be free from paying of custom and all other duties and gave Mr Boughton two neshans to that end ”

The above account appears to have been the basis of the legend related by Stewart in his “ History of Bengal,” which is quoted here at length, as the whole story is of some historical importance, purporting as it does to set out the manner in which the Company was able to establish its trade in Bengal The account given by Stewart is as follows —

“ In the year of the Hezira 1046 (A D 1636), a daughter of the Emperor Shah Jehan having been dreadfully burnt, by her clothes catching fire, an express was sent to Surat, through the recommendation of the Vizier Assud Khan, to desire the assistance of an European Surgeon In this service the Council at Surat nominated Mr Gabriel Boughton, Surgeon of the ship *Hopewell* who immediately proceeded to the Emperor's camp, then in the Dekkan, and had the good fortune to cure the young Princess of the effects of her accident Mr Boughton, in consequence, became a great favourite at court, and having been desired to name his reward, he with that liberality which characterizes Britons, sought not for any private emolument, but solicited that his nation might have liberty to trade, free of all duties, to Bengal, and to establish factories in that country His request was complied with, and he was furnished with the means of travelling across the country to Bengal Upon his arrival in that province, he proceeded to Pibley, and in the year 1048 (A D 1638), an English ship happening to arrive in that port, he, in virtue of the Emperor's firman and the privileges granted to him, negotiated the whole of the concerns of that vessel without the payment of any duties

“ In the following year the Prince Shuja having taken possession of the Government, Mr Boughton proceeded to Rajmahal, to pay his respects to his Royal Highness, he was most graciously received, and one of the ladies of the *harem* being then indisposed with a complaint in her side,

the English Surgeon was again employed, and had the good fortune to accelerate her recovery. Owing to this event, Mr. Boughton was held in high estimation at the court of Rajmahal, and, by his influence with the Prince, was enabled to carry into effect the orders of the Emperor, which might otherwise have been cavilled at, or, by some underhand method, have been rendered nugatory.

In the year 1646 (A. D. 1646), the same ship returned from England, and brought out a Mr. Brademan, and some other persons, for the purpose of establishing factories in Bengal. Mr. Brademan, having represented the circumstance to the Prince, was ordered to send for Mr. Brademan, that gentleman, in consequence, went to Rajmahal, was introduced to the Prince, and obtained an order to establish, in addition to that at Pipley, factories at Balisore and Hooghly. Some time after this event, Mr. Boughton died, but the Prince still continued his liberality and kindness to the English.

Unfortunately later research has shown that there is little foundation for this colourful story. The accident to Princess Jahanara, daughter of Shah Jahan occurred in 1632 and Boughton did not go to Agra till early 1645. She appears to have been treated and cured by Amulla, the most famous Yunani Physician of his age. The factory at Pallyore was established in 1633, twelve years before Boughton went to Agra.

The story of Boughton's mission to Agra and the accident to Jahanara appear to have become mixed up, though the story of Boughton's service to the Company was current within twenty years of his death, thus forming an illuminating commentary on the mesotitude of tradition of even such short duration.

There is no doubt that Boughton was sent on a mission from Surat to Agra to the Court of Shah Jahan in early 1645, the true account of which is most likely that contained in a letter to the Company by their President at Surat in January, 1645, which runs as follows:-

A sultan Claine, a very great Amra, pration with the king, and our very good friend, having bene importuned us to supply him with (1) Chirurgeon wee Considering how advantageous it may be unto you, and having a fit opportunity, one Gabriel Boughton, late Chirurgeon of the *Peace* being thereto very well qualified and being willinge to stay, wee have thought fitting to desire him to that service, wherewith A siltant) Claine is so well pleased that lately when Mr. Turner was to leave Agra he accompanied Mr. Lush and Mr. Turner to the King, who honored the same more then ordinary in a long conference he held with them, dismissing them with vests, and sending unto the President a firman and dagger, which not being yett received we know not what the former may import of the Latters view, but shall hereafter advise, and if the digger be of any considerable worth it shall be sent to you with the jewell before advised the Prince lately sent unto the President, both expected by Mr. Turner."

Another source of confusion in the story of Gabriel Boughton is to be found in the fact that there was in the suite of Sir Thomas Roe, Ambassador at the Court of the Great Moghul, 1615-19, a Mr. Boughton whose sole claim to distinction seems to have been that, when Sir Thomas' ship touched at Tamara on the coast of Arabia, "he alone was allowed to visit the house of the Mussalman King, when he was treated with 'chhu,' a black liquor, drank as hot as could be endured, and which is supposed to have been coffee."

In spite of the discrepancy in time of nearly twenty years the Boughton legend was fathered on to this private adventurer whose Christian name was Humphrey and not Gabriel. Furthermore, side references in Court Minutes show definitely that the Surgeon accompanying Sir Thomas Roe was Christopher Greene.

To continue with the story of Gabriel Boughton. In 1646 he went to Balkh in Central Asia with Asalat Khan who had been appointed Governor of that province. After the death of Asalat Khan he returned to Agra in 1647 and attached himself to the Emperor's second son, Shah Shuja, Viceroy of Bengal, with whom he achieved considerable success, presumably on account of his professional skill. At the end of 1650 he was located with the Viceregal Court at Rajmahal and was granted a farman from Shah Shuja for free trade in his dominions. He married an Indian woman who survived him for twenty years, marrying in turn two other Englishmen. There was a son to Boughton by this "Mogullana" named after himself, and there is a record that this lad was given a passage from England to Bengal in October, 1670, but nothing else is known of him. Boughton died in 1653 and concerning his death Crawford says that —

"The date and place of Gabriel Boughton's death are unknown. No stone marks his resting place, no memorial to him is in existence. His name is not even mentioned in the Dictionary of National Biography. But History records his services to the Company and to this Country."

Surgeon-Major Norman Chevers, in his book "Surgeons in India, Past and Present," is more poetical —

"Do the ruins of Rajmahal still enshrine that honourable dust, or have the waves of the invading river swept it down to that ocean, which was the only fitting sepulchre for so large and pure a heart?"

EARLY SETTLEMENTS AT MADRAS

The early settlements on the Coromandel Coast were usually referred to as "The Coast" and those in Bengal as "The Bay," and these terms were still in use up to the end of the eighteenth century. The term "West Coast" did not refer, as might be expected, to the Bombay Presidency, but to the settlements in Sumatra.

The first voyage to the East Coast of India was made by the *Globe*, Captain Anthony Hippon, in 1611, when the first factory in the Bay of Bengal was established at Pettapoli, later known as Nizampatam. The establishment of that factory was followed shortly by a factory at Masulipatam. The former factory was closed in 1621, at which time the English joined the Dutch at Pulicat, where they remained until 1623.

The first factory on the Coromandel Coast proper was founded at Armagon in the Nellore district in 1625. The Masulipatam factory was closed in 1628, and Armagon remained for a few years the only factory on the coast. In 1630 all these

factories of the Company were placed under the President of Surat. One of two other factories were established around the Kistna Delta and in 1634, a farman known as the "Golden Farman" was given at Haidarabad for trade in Golkonda. It was not until February, 1640, that the settlement of Fort St. George was established at Madras by Andrew Cogan and Francis Day. The life of Andrew Cogan is typical of the adventurers who made our Eastern Empire. He entered the Company's service in 1615, served for fifteen years in Bantam and Macassar, returning to England with a considerable fortune in 1630. He revisited Surat in 1638 as a Member of Council, founded Madras and left India for good in 1643. He reached England in 1644 during the Civil War, and bought an estate near Greenwich. In 1648 he took part in the rising of the Men of Kent which failed. Cogan fled the country, was impeached and lost his estate. He spent about £40,000 in the Royalist cause and was created a Baronet by Charles II.

In 1653 Madras became an independent Presidency, but was eventually placed under Bengal in 1774 when Warren Hastings became Governor-General and Calcutta the capital of the whole of India. As has been mentioned earlier, the Dutch Factory at Pulicat, some twenty-five miles north of Madras, was founded about 1610 and the Danish East India Company occupied Tranquebar in 1616.

The first Surgeon of whom there is any record on the Coast was John Clarke, appointed to the Fort at Armagon in 1630, but the first Surgeon of whom we have knowledge at Madras was Edward Whiting, who was transferred there from Bantam in 1649. Little record survives regarding Dr. Whiting, beyond the fact that the Captain of the Garrison at Fort St. George challenged him to a duel in 1654, and that, in 1656, he returned to England. He was again in India in 1663 when he was appointed as Surgeon to all the factories in the Bay.

In 1676 a second surgeon was allowed for the Madras factory —

"Considering how numerous the People wth you grow, (and) being desirous to use al means for the preservation (of) yor healths we have entertained here Mr Bezaliell Sherman alsoe as Chirurgeon and at the Like Salery wth him already there he carries over wth him his wife Passage free and One (*lacuna* in original) an Apprentice at his Owne Charge and both are to be at his Charge there and he is Obleiged to Bring the sd Apprentice up a Chirurgeon and noe otherwise employed and to remaine at the Fort" 14

Permission to employ Assistants, or Mates, had been given to the Madras Surgeons as early as 1675, and some of those young men appear to have got themselves into the same trouble that young men in other centuries have found it difficult to avoid. A letter from the Chaplain of the Fort dated January, 1675, shows that —

"One Mr Mallory formerly Chyrurgeon's Mate in the President now Chyrurgeon's Mate in this place and another Barnes who formerly went to Sea as Master of some Small Vessels, but having wasted the money Intrusted to him lives now Idlely and out of any Employment. These two are Constant Companions wth any of the Young men in whatever debaucheries they were guilty of, and it gives ground to suspect that they may be guilty of enticing them thereunto"

The same Mr. Mallory is shown in the official records of the next year as "a very diligent and able Surgeon," so it seems that he reserved his misdemeanours for the time that he was off duty. He was appointed Full Surgeon in 1680 and died in 1682. It is recorded that at that time the pay of an Assistant was Rs 17/- a month, from which not much would remain over for the "debaucheries" complained of by the Chaplain.

The veil that hides the life story of so many of these early doctors is partly drawn aside in the case of John Heathfield to show his wife as the first doctor's wife of whom we have a record in India. He was, in 1680, sent to Madras from Masulipatam on account of his health, and took over from the Mr. Mallory noted above who was sent to Masulipatam in his place. In 1685 Heathfield was appointed as Factor at half the salary he drew as a Surgeon, but with better prospects. The Court of Directors disapproved of this appointment and, in 1687, Heathfield reverted to his true work as a Surgeon. Such changes of work appear, from his application, to have been usual —

"Knowing that it has been the Custome of your Honr &ca and other Nations to alter the employment of their servants, I therefore humbly beseech your Honr &ca to receive me as a Factor"

He died on 2nd April, 1688, aged forty-three years, five months and twenty-seven days, and was buried in the graveyard attached to St. Mary's Church where his tombstone still remains. He had married, at Masulipatam, the widow of Mr. Robert Fleetwood of the Company who had died there insolvent. Fleetwood had taken the lease of the town of Narsapuram, which was a proceeding contrary to the orders of the Company, and Heathfield had to surrender it. His widow was, however, left well off. She occupied a fine house in the Middle Street and owned a garden house at Peddinaikpetta which she sold to the weavers of Madras in 1707. She survived her husband for twenty-five years, dying in 1723. There were two daughters — Theophila and Cornelia, the latter marrying in turn two of the Company's servants.

At the beginning of 1687 Fort St. George was being prepared against an attack by Aurungzeb, who had invaded Golkonda, and the following orders were issued —

"Doctor Willmot & Dr. Plummer's charge is vizt. To provide and make Salves for wounds, and to bee as sparing of the Small Chirurgery Box on the Rebecca as they can, that we may not want upon great occasion.

"There being a sett of large Chirurgeons Instruments att Metchlepatam, which may bee useful here, up on any expedition, it is ordered that Mr. Freeman &ca bee wrot to, to send them hither." 15

It is of interest to record the earliest medical certificate in India which has survived, given during 1693 —

"We the subscribers having according to your Orders visited Mr. John Nicks, find him very much indisposed by a Chilly numbness in his feet and hands, and an oppression in his Brest and Stomach which is a hindrance both to his speech and breathing, these symptoms in all probability

are occasioned by melancholy, want of exercise, and his being oblig'd to breathe a stagnating aire, which except speedily remedid (since it approaches his Stomach) may prove of Dangerous Consequence ”

“ Edward Bulkley, Samuel Browne ” 16.

One of the two Surgeons signing this certificate, Edward Bulkley, was appointed first Surgeon at Fort St. George on 29th December, 1692—

“ one in every way very fitly qualified to serve us by his large experience of India as well as here, and is fit for prescribing Physick as manuell operations, and we suffered him to carry out an apprentice that he might not Complaine of want of help. And in respect to him we are willing to allow the Office of Coroner, and such perquisites therewith for sitting on the bodys of any persons that shall come to any untimely end by casualty or otherwise, as you shall think fitting, to be paid by the relations of the deceased, considering the poverty of the Generality of your Subjects. The usual fee here is 1000 but wee think two Rupees is sufficient where the persons are of Ability ” 17

It was curious that one of Bulkley's first duties as Coroner was to perform a post mortem on Mr. Wheeler, the Chief Justice of the Choultry, who was accidentally poisoned by his colleague, Surgeon Samuel Browne. The report of that post-mortem has been preserved and is probably the oldest given in India.

Doctor Bulkley had to retire on 29th January, 1708, as he was “ very much indisposed by the Stone, which he fears will be very suddenly fatal to him ” In spite of this he held various non-medical offices, including that of Justice of the Choultry, and died on the 10th August, 1714. He was buried in his own back-garden, which later became part of the Western Esplanade of the Fort, and his tomb may still be seen opposite the entrance to the Medical College grounds. His family listed on for three generations to serve the Company in Madras.

Dr. Samuel Browne had been appointed Second Surgeon at Madras in 1688, and held that office for ten years. His letter to the President concerning his unfortunate experience with the Chief Justice was short and to the point —

“ Honble Sir I have murdered Mr. Wheeler by giving him Arsnick. Please to execute Justice on me the misfactor as I deserve.

Your Honours unfortunate obedt. Servant

Samll Browne ” 18

He was duly tried and acquitted by a Grand Jury “ who brought in the bill *Ignoramus.* ” There was some dissatisfaction in Madras at the result of the trial.

In 1695 Browne was again in trouble having, when drunk, challenged his colleague Dr. Blackwell to a duel. In April, 1696, he was accused of having beaten up one Ananta Terterra, his Junkameer of Vepery, and of having then carried him away by force, and robbed him to the tune of six thousand Pagodas, “ but this was not substantiated ”

The office of Second Surgeon at Madras was disallowed in November, 1697, and Browne was offered the post of Surgeon at Calcutta, which he declined. He died at Madras on 22nd September, 1698, leaving a wife who, in 1700, married

John Foquet, "Scavenger" of Madras, who in spite of his unsavoury title was a well-respected official in charge of taxation as well as conservancy

Browne finds an uneasy place in the "Dictionary of National Biography," where it is recorded that he sent, from time to time, collections of dried plants to England which now form part of the collections of the British Museum

The last of these strange histories of Madras is that of Richard Benoni Ebenezer Blackwall who acted as Surgeon at Fort St David, of whom it is recorded that —

"Fort St David, being the weakest, was first thought of, and the Surgeon of the place, a Dr Blackwell, who had, from his profession, got access to the Mogul's camp, became, for a large bribe, the instrument of the enemy, —in return, he was to be made Governor of Porto Novo, and to hold it under the Mogul's protection Blackwell's treason was fortunately discovered, and he was seized and carried to Madras, where he made a full confession" 19

The Court do not, however, seem to have taken a very serious view of the matter for, though Blackwell was kept under guard in the Fort for a year, he was subsequently set at liberty and, on 1st April, 1695, enrolled as Attorney in the Mayor's Court —

"It is resolved that he be permitted to practice as an Attorney in Said Court so long as he shall behve himselfe well Whercof ye Mayor is desired to take particular notice" 20

It was on 21st November of that year that Dr Browne challenged him to the duel which we referred to earlier.

"Lewt Scaton acquainting us he heard of a Quarrell between Dr Browne and Doctor Blackwall, vpon wch Dr Browne was gone to a garden wth a sword, he is ordered to take a gurd and bring them both to us, and he returning presently with them reports that he found Dr Blackwall at his House, and Doctr Browne returning from the Garden, vpon examing them they agreed yt there were words of quarrell between them at Dr Blackwall's House, but that Doctr Blackwall did not goe from his House Dr Browne appearing to have drunke so much, and not capable of an examination" 21

In 1697, as he had behaved well during the three previous years, he was appointed Surgeon to the West Coast He died in 1701

Perhaps we may best picture a cross-section of the medical profession in these early days from the comments made in Love's "Vestiges of Old Madras" concerning Surgeon Thomas laucet, who was a contemporary of Browne and Blackwell. Of him it was said that he

"has never been thought capable of any considerable trust by reason of a Moon Frenzy that seldom fails him full or new, besides he is intollerably addicted to drinking, old, perverse, and ignorant in business, a Physician if anything, but not enuff of that to keep him from starving even in this Country where Doctors are so scarce" 22

THE EARLY HISTORY OF THE COMPANY IN THE BAY

The first factory in the Bay was opened at Patna on 3rd July, 1620, by Robert Hughes This factory actually had nothing to do with the Bay Hughes was a Factor

sent from Surat to Agra, and continued his journey to Patna. The factory had only a short existence and was closed in September, 1621.

The first English settlement in Orissa was established in the spring of 1633 by two merchants, Cutwright and Colley. They landed on Easter Day—21st April—at Hirispur and started for Cuttack to interview the Viceroy of Orissa, from whom they obtained permission to build a Factory and construct ships, and to trade free of custom. The factory was erected at Harihapur, half way between Cuttack and Hirispur. Later factories were erected at Balasore, Hughli, Kasimbazar, Patna, Dacca and Malda. The first in Bengal proper was at Hughli, founded by James Budgeon in January, 1651.

For many years the Bay settlements were subordinate to those at Madras, and the Madras Council actually passed a resolution in 1657 that they would withdraw entirely from the Bay but that decision was never put into effect. In fact, we find that, in 1674, Hughli had become the chief settlement in the Bay to which the others were subordinated. By 1685 it was decided that the Bengal settlements should be made independent of Madras, but it was not until Sir Charles Lyte became Governor of Fort William in Bengal in 1700 that this decision was finally ratified, and Bengal became independent. When Warren Hastings, who was Governor of Bengal from 1772, was appointed Governor-General of India in 1774, Madras and Bombay were themselves made subordinate to Bengal.

The establishment of the Company in the Bay ran a much more stormy course than was the case in Bombay or Madras. From 1686 to 1690 the Agent was continually at war with the Moghul Government. In 1686 the garrison was withdrawn from Hughli and settled temporarily in what is now Calcutta. In 1687 a retirement was made to Balasore, Hughli was seized and withstood a siege of some months. The Nawab of Bengal, having offered them permission to return to Hughli, the English settled again at Calcutta and remained there for about a year. By the beginning of 1689 they were out again, withdrawing to Balasore, and finally to Madras, while those who remained in the up country factories were left to their fate. Later in that year Ibrahim Khan was appointed Viceroy of Bengal and released the English prisoners who were, under the orders of Aurungzeb, invited to return to their stations. They reached Calcutta for the third time on Sunday, 24th August, 1690, at noon and that date is usually considered as the date of the foundation of Calcutta.

When the Company established themselves at Calcutta the abandoned site at Hughli was occupied by interlopers, or private adventurers, the best known of whom was Thomas Pitt, who became Governor of Madras from 1697-1709, imported the Pitt diamond, and was grandfather of William Pitt, Earl of Chatham.

The first Surgeon of whom we have knowledge in the Bay was Samuell Archer, Chyrurgion in Pegu in 1652, but the first to be mentioned as posted in Bengal was the Edward Whiting whom we have already met in Madras, who was transferred to work in the Bay factories in February, 1662.

On the whole the surviving records of the Surgeons in the Bay and in Bengal are less extensive and certainly less picturesque than those of their colleagues in the other two Presidencies

Service with the Company was at all times hard and rough and it was not likely that it would attract the best men. We read, for example, that Robert Harwar did not meet with approval "hee being little skill'd, and of so ill a disposition, everyone is prejudiced against him" Robert Douglas also, was dismissed for indulging in private trade, generally with interlopers

One of the troubles which those adventurous enough to take service as surgeons of the Company had to face is described in a Fort St George Consultation of January, 1688 —

"Henry Wattson Surgeon and severall others Soldiers and Seamen, being the Rt Honble Compas Servants, some belonging to sloop James, having being taken prisoners at Syam, and others from Bengall belonging to sloop Hopewell being forced to serve those Pyrats, after being releas't, were by Mr Jno Hill entertained at Mallacca, & brought hither upon the Pearle friggot, having been great sufferers by their detaynment, yet tis not thought reasonable to allow the whole amount of their wages from ye time of their being taken, but agreed yt they be paid from their entertainment & service upon the Pearl friggot to this and that they be continued upon her"

The first note given by Crawford of a medical fee is when, in May, 1695, John Plomer, Surgeon at Calcutta, presented a bill for Rs 868/- for attendance on the late Captain Absolon, and was paid Rs 450/-¹ This is followed by the observation that on 7th September of that year Plomer was discharged at his own request. He did not, however, leave India until 1697, when he was succeeded by William Warren, who spent some thirty-two years in India, fourteen on the Coast, eight as Surgeon at Calcutta and the last ten as a free merchant at Madras. He was accused by the Chaplain of Fort William in 1699 of having contracted a bigamous marriage

"That adulterous marriage of William Warren, Surgeon to the Factory at Calcutta, with Elizabeth Binns, a widow there, tho' admonished, caution'd and advised to the contrary, when she and everybody that knew Mr Warren knew also that he was marryed to another woman, who would have come out to him if he had had a mind to it. But it seems that the obligations of marriage, or anything else, are of little consideration with Mr Warren, being a man of most pernicious principles and debauchd manners" 23

The accusation was probably correct and this may account for the acerbity with which the Factor insisted upon Mrs Warren keeping her proper place in Church —

"Since the women insist upon place att Church, I think my wife may put in her claim among the rest, I do therefore desire on her behalf that you will be pleased to order her a seat Agreeable with my station in the Compas service, and consequently that the Surgeon's Wife (who has twice either Ignorantly or Impudently Assumed her place) may be no more permitted to sit above her Husband's Quality" 24

Warren appears to have died in 1716.

A NOTE ON THE MINOR MEDICAL SERVICES OF THE COMPANY

In addition to their Indian Medical Service proper, the Company established certain other services in the districts where they maintained factories —

A. THE ST. HELENA MEDICAL SERVICE

The Island of St. Helena was first discovered by the Portuguese in 1502 on St. Helen's Day, 21st May. They appeared not to have taken formal possession, as we find the Island annexed by the Dutch in 1633 and abandoned by them in 1651 when they occupied the Cape of Good Hope. The East India Company took possession of the Island in 1669, being confirmed in this step by a Charter from Charles II, dated 3rd April, 1661. A Resident Surgeon was posted in 1668. The Dutch retook the Island in 1673, but it was again taken from them the same year, when the Company received a new Charter. The Company held the Island until 1834, except during the years 1815 to 1821 when the British Government used it for the detention of Napoleon. When their trade was abolished in 1833 the Company handed the Island to the Crown.

The St. Helena Medical Service was a very small one and there were never more than four or five doctors on the Island at one time. Among those was Matthew Livingstone who took part in the autopsy on Napoleon. The last medical officer to receive a permanent appointment (Dr. Waddell in 1828) was murdered by pirates two years later as he was returning to England. The schooner on which he was travelling was scuttled and he and the Commander of the vessel were tied back to back and thrown overboard.

B. THE WEST COAST MEDICAL SERVICE

In the account of the development of the Company on the Islands it was mentioned that, when they were driven out by the Dutch from the other Islands, they made their Headquarters in Bencoolen in 1685. In addition they established other settlements at Moco Moco, Minna and Natal in the early eighteenth century. Sumatra was entered for medical purposes by the Madras Presidency, to which it was subordinated, and which used it as a dumping ground for unsatisfactory officers. In 1763 Bencoolen became an independent Presidency, and remained as such until 1785, when it came under the control of Bengal. Transfers were made from the West Coast Service to Madras, and later, after evidence of satisfactory service, to Bengal.

When the I.M.S. was constituted in 1764, the West Coast Service became independent until 1794, after which it was officered from Bengal until its final dissolution in 1825, when Sumatra was handed over to the Dutch in exchange for Malacca in the Malay Peninsula.

C. THE PRINCE OF WALES ISLAND MEDICAL SERVICE

The Island of Penang was ceded to the Company in 1786 by the Raja of Kedah, and was renamed "The Prince of Wales Island" In 1798, a strip of mainland opposite Penang was added Malacca was first occupied by the Portuguese in 1511, seized by the Dutch in 1640, and taken from them by the British in 1795, who held it until 1818 when it was handed back to Holland It reverted finally to Britain in 1825 in exchange for Sumatra which was surrendered to the Dutch Singapore was occupied by the British in 1819 and formally ceded to them by the Raja of Johore in 1824

As these possessions were accumulating, the Company proposed in 1801 to form a fourth Presidency to include their factories in Further India and the Islands, having its seat of Government at Penang This scheme was put into partial effect, Penang being made a separate Presidency in 1805, but no separate Medical Board was appointed The medical staff were obtained partly by recruitment to a small separate service and partly by officers lent from the other Presidencies, chiefly from Bengal In all, there were not more than fifteen officers in this new Presidency

In 1830, the small Presidency of Penang, Singapore and Malacca was abolished, and the settlements placed under the Government of Bengal At that date there were only four medical men still serving, and they were transferred to the Bengal Service The settlements continued to be staffed from Bengal until April, 1867, when they were incorporated as a separate Crown Colony—the Straits Settlements

Only one medical officer in this Service is mentioned by Crawford as of any special distinction—Charles Mackinnon—who became M P for Ipswich in 1826, 1830 and 1831.

D. THE CHINA MEDICAL SERVICE

This was the smallest of all the services and never consisted of more than two men at one time—one at Canton and one at Macao No territory was ever owned by the Company in China

Their first voyage to China was made from Surat to Macao in April, 1635 The Portuguese had occupied Macao in 1545, and the Dutch had established a factory in Formosa in 1607 The Company made various attempts at settling down in China—Formosa 1670, Tonquin 1672, Amoy 1679—but these did not last more than a year or two Finally, in 1715, they had established themselves at Canton, and by 1757 all English trade was centred on that port The trade of the Company with China lasted until 1833, twenty years after their monopoly in India had been abolished In that year their factories were closed and the China Service was dissolved

Two of the China Surgeons deserve mention. One was referred to in a Fort William General letter of 5th April, 1783 —

" 107 Mr Abraham Leslie, late Surgeon to the Factory at Canton, presented a memorial complaining of oppressions which he suffered in a long and unmerited imprisonment from the

Portuguese Government at Macao, and praying our interference to obtain redress. As it appeared, from his own state of the case, that his confinement at Macao was occasioned by his violent and unjustifiable conduct towards the Chinese at Canton, and the consequent necessity of removing him thence at the requisition of the Mandarines, we did not think it proper to countenance his complaint."

The other was Thomas Richardson Colledge who joined the Canton Factory in 1831. He continued to serve under the Crown at Canton after the withdrawal of the Company, and retired to England only in 1841 to settle in Cheltenham, where he lived for thirty-eight years, dying in 1879 at the age of eighty-three. He took the M.D. of Aberdeen in 1839, became F.R.C.P., Edinburgh, in 1840, F.R.S., Edinburgh, in 1844, and F.R.C.S., England, in 1853. In 1837, while still in China, he founded the Medical Missionary Society of China.

E. CEYLON

Ceylon was first occupied by the Portuguese in 1507. They were driven out by the Dutch about a century and a half later. The Company sent an expedition to annex the island at the end of the eighteenth century when England was at war with France and Holland. They attached it to the Madras Presidency. In 1801 it was handed over to the British Government and became a Crown Colony. The Company never constituted a separate service for Ceylon, though there was one medical officer, Thomas Christie, who was appointed by the Company direct to Ceylon. He was posted in 1797 to Tricomali and in 1800 became Superintendent of Military Hospitals in Ceylon. His services appear to have been taken over by the British Government, which he served until 1810, when he retired to Cheltenham, becoming Physician Extraordinary to the Prince Regent in 1813.

F. THE CAPE OF GOOD HOPE

The Cape of Good Hope was first occupied by the Dutch in 1651 and taken by the British in 1795. The Company never governed the Cape, but they kept an Agent there until 1835 and made use of the Colony as a sanatorium for their civil and military officers on sick leave.

SURGEONS IN THE SERVICE OF THE PRINCES

During the seventeenth century several surgeons of different nationalities took independent service with various Eastern Potentates.

The first of these has already been referred to in these pages—the Scotsman George Strachan, who served the Emir Feiad of Arabia Deserta from 1615–18.

A notable example was François Bernier, born 1620, who arrived in Surat early in 1659 and took service with the eldest son of Shah Jehan, Prince Dara Shikoh. This Prince, in his attempt upon the throne, was defeated by his brother Murad

and Aurungzeb on 8th June, 1658. When Bernier joined him he was on his way to Sind, where he was betrayed, taken to Delhi and eventually murdered on 29th August, 1659.

Bernier appears then to have joined the suite of Aurungzeb, and was noted as going in his train to Lahore in July, 1665. In December, 1665, he travelled to Bengal with the explorer Tavernier. He separated from Tavernier at Rajmahal the next year, and went on to Kasimbazar, visited Golkonda in 1666, left Surat in 1667, returning to Europe through Persia and died in Paris on 22nd September, 1688.

Nicholas Manucci was born in Venice, 1639, and in 1653 left for the East. At Smyrna he met an Englishman, Lord Bellamont, into whose service he entered, and with whom he visited Ispahan. They reached Surat in 1655 and proceeded to Delhi where Lord Bellamont died. Manucci then took service with the Prince Dara Shikoh as an artilleryman on Rs 80/- per month. (At that time the surgeons of the Company, including the Chirurgeon-Generall, received only Rs 36/-) After the defeat of Dara by Aurungzeb, Manucci joined the service of the latter. About 1660 he appears, without having had any previous training or experience, to have adopted the profession of medicine, which he practised in Lahore for seven years (1671-78) after an interlude as Captain of Artillery under Raja Jai Singh of Jaipur from 1664 to 1665.

He served as Physician to the eldest son of Aurungzeb from 1678 to 1682, was in Goa in 1683-84 and finally reached Fort St. George in 1686 where he married the widow of Thomas Clarke, a servant of the Company, and spent the remainder of his life in the practice of medicine at Madras and Pondicherry. The date of his death is uncertain.

Manucci mentions other European surgeons whom he had met or heard of—Sikandar Beg, an Armenian, Surgeon to the eldest son of the Prince Dara, Jacob Minues, a Dutch Surgeon, whom he met at Agra, who had killed a man in Goa and fled that country.

Others mentioned were the Dutch Surgeons Gelmer Vorburg in Assam, Luis Beicao, serving with Raja Jai Singh, Angello Legrenzi, a Venetian at the Court of Shah Alam at Aurungabad, D'Estremon, with the King of Golkonda, and Mons Cattem in Bengal.

Tavernier mentions two French Surgeons, François de la Palisse, at the Mogul Court, and Claudius Malle of Bourges, Surgeon to the Governor of Allahabad both in 1666.

A French Physician, Mons Martin, was in the service of the Court of Delhi from 1715 to 1728, and Friar Bazin is mentioned, in Malcolm's "History of Persia," as Physician to Nadir Shah, who captured Delhi in 1739 and carried off the Peacock Throne. Bazin joined Nadir Shah in 1741 and was murdered in 1747.

The above-mentioned Surgeons and Physicians, with the exception of Strachan, Bernier and Manucci must remain merely names, as no other record of them has survived.

Of the Surgeons who served Hyder Ali and Tipu Sultan a little more information is available. There was, for example, Jean Martin, the Frenchman who deserted from Hydr to the English in December, 1767 in the First Mysore War and afterwards served for thirty years in the Madras Medical Service. The circumstances of his coming over were set down in a letter from Fort St. George dated 29th September, 1767 —

“ A Frenchman by name Le Chevalier de St. Lubin who had been detained as a prisoner and ill treated by Hyder Ally, having found means to make his escape with Captain McKain, seems full of Repentment at his ill Treatment, and has communicated to Us a Project for withdrawing from Hyder Ally, all his European Horse and Foot Topasses, and Mogul Cavalry, this Project is to be conducted by one Martin, formerly in our Service at Madury, now Doctor with and much in the Confidence of Hyder Ally, and one Hely Commandant of the Portuguese and Topasses. He is an officer belonging to Goa, but detained against his Will to serve Hyder Ally, consequently is much distressed, & as we understand, all his Troops ”

In August, 1786, Martin was placed under arrest on suspicion of complicity in a murder, and in March, 1787, was sent to Madras for trial. He was acquitted, restored to the service and appointed Surgeon to the Foreign Regiment. His account of the matter of the murder was given in a memorial which he submitted to the Madras Government in January, 1795, in the course of which he stated that he had been assaulted and robbed by one of his peons and that the peon was himself murdered five days later, probably by one of his accomplices. He details the services which he had rendered to the Company, pointing out that he had brought with him from Hydr Ali all the European Cavalry, that he had seen field service but that when war was declared with France he had been ordered to reside at Bimlipatam and that after peace was declared he had been passed over and forgotten. No orders regarding this petition are recorded.

In 1770 Surgeon Robert Adams of the Bombay Service was deputed to attend Hydr Ali on the occasion of the treaty after the First Mysore War. He served thus for a period of five years, but unfortunately left no record of his unique experiences. The only letter from him to the Council, quoted by Crawford, is mostly concerned with his arrears of pay, except for the observation that “ my Situation in Hyders Country was very disagreeable and expensive.”

According to an anonymous work “ Memoirs of the War in Asia from 1780 to 1784,” there were at that time three European Surgeons in Hydr's service. There was Dr. Lloyd, formerly of Madras, whom the prisoners met on 12th September, 1780.

“ At this time Lieutenant Bowser saw Dr. Lloyd, whom he had formerly known at Madras, coming out of Hydr's tent. He instantly requested one of the guards to call the Doctor, and, after making himself known to him, begged that he would obtain an order that his small party might be sent to Colonel Baillie and the other officers. With this request the Doctor complied, without the smallest delay ”

Dr Lloyd escaped from Haider Ali in 1781 and settled in practice at Madras, where he died in April, 1815, at the age of ninety years. He was a Hanoverian by birth, and descended from an ancient Welsh family. He had originally arrived in India in 1772 and, while making a journey overland in 1777, had been captured by Haider Ali's forces and compelled, for several years, to act as Physician-General and Secretary to that Prince.

The second Surgeon was Mons Castro who "shewed us great humanity and attention at Arn," while in December, 1780, the prisoners were treated by a third Surgeon, Mons Fortuno, at Seringapatam. The Mons Castro referred to was evidently Jean Castarede who applied for an appointment in the Madras Service in 1789 with strong recommendations from the officers who had been prisoners as well as from the Surgeon-General and the Commander-in-Chief. His application in this respect stated that —

"It has been my Misfortune to have been compelled to serve Hyder 19 Years without a Glimpse or Chance of escaping from his Tyranny and Oppression, and but very recently was favored by fortune to get from his Tyrant Son Tippoo (with my Wife and Children) by a French Vessel, that was then at Mahe, but Obligated in the prosecution of my endeavours to Escape, to leave every part of my property behind me, and since my Arrival at Pondicherry, after the best part of my Life has been devoted to Slavery, I found myself without the least Provision made for myself and family" 25

The Madras Government, however, felt unable to appoint him, but gave him a donation of five hundred pagodas. This decision was reversed by the Court of Directors and he eventually found employment in the Madras Service in June, 1790. He died at Kadalur in 1798.

Two other French Surgeons are recorded—Jean Carere, who served the Governor of Madura, during the siege of that place in 1764, and deserted to the English, being appointed Assistant Surgeon in 1764 and Full Surgeon in 1767, and Jean Baptiste de St Hilaire who acted as Physician to the Governor of Vellore in 1716, and lived afterwards in Madras.

The majority of the English Surgeons of whom we have record are those who were from time to time in the service of the Nawab of Arcot, several of them being lent by the Madras Council and several, after employment by the Nawab, taking service under that Council. In 1778 the Nawab had as many as eight European medical men in his service, two physicians and six surgeons. The most outstanding of the Nawab's medical advisers was Sir Paul Jodrell, who was Physician to the London Hospital, 1786-87, and resigned that office to go to Madras as Physician to the Nawab. He was knighted before leaving England. His experiences in India were not fortunate. He had continually to complain to the Madras Council that the Nawab would not pay him his salary. In 1790 he brought an action for libel against the *Calcutta Gazette* and was awarded Rs 500/- In 1793 he asked that he might be considered as one of the Nawab's family in order to be exempt from arrest for debt. He died in Madras in 1803.

A NOTE ON HOSPITALS IN INDIA IN THE SEVENTEENTH CENTURY

The first hospital known to have been established in India appears to have been at Goa. It is mentioned in Evelyn's "Travels" that hospital had the remarkable distinction that it actually made a profit.

"The Paulistines enjoy the biggest of all the Monasteries at St. Roch, in it is a Library, an Hospital and an Apothecary's shop well furnished with Medicines, where Gaspar Antonio, a Florentine, a Lay Brother of the Order, the author of the Goa Stones, brings them in 50,000 Scrophins by that invention annually. He is an Old Man, and almost Blind, being of great Esteem for his long practice in Physick." 26

The earliest hospital erected under the auspices of the Company was opened in 1667 at Madras —

"The Souldiers in y^e Fort since your worp^t absence hath been something strictly held to y^e duty, and according to your Order they had noe free guard, so y^e the fresh Souldiers which come forth w^{ch} were taking up their habitatione in y^e bleake winde in y^e hall fell sick in y^e fower of y^m are dead, about tenne remaine At y^e time very sick and complaine (and it seems not without Reason) that y^e wages are not sufficient to supply them with w^{ch} necessary now in y^e time of their sickness &c. Rather w^{ch} to see English Men dropp away like dogges in y^e Manner for want of Christian Charity toward y^e wee have thought it very convenient w^{ch} they might have an house on purpose for y^m and people appointed to looke after y^e and to see y^e nothing comes in to them neither of meate nor drinke but w^{ch} y^e Doctor alloweth, and have for y^e purpose Rented Mr. Cogan's house at 2 pagodas p. Moneth w^{ch} wee hope you will so well approve of us to continue it for y^e future, and in regard wee esteeme ourselves to bee in a very quiet condition not fearing any Disturbances wee thought good as formerly to appoint y^e a free guard againe for y^e encouragement, for it seems they were much Disheartened and have long prayed for your Worp^t coming." 27

This hospital was enlarged in 1679 and, in the same year, a second hospital was commenced in Madras, paid for by public subscription and completed in 1688, at a cost of Rs. 3,000. It was a large two-story building, the property of the Church and Vestry. When built it was found to be unsuitably sited and was bought up by the Council, who directed that a new hospital should be built near to the river, which was erected between 1688 and 1692 in James Street, in the Fort, and was a handsome building in the Tuscan style. This occurred during the Governorship of Elihu Yale, who was born at Boston, Massachusetts, in 1648, the son of an Englishman, David Yale, who had emigrated to the New England Colonies, and settled at New Haven, Connecticut, removing later to Boston. David Yale returned to England in 1652, and Elihu was appointed a Writer in the service of the Company in 1671. By 1687 he was First in Council and Governor of the Fort. In 1713 he gave a large donation to the school at New Haven which, in 1745, developed into the great University, named after him—Yale University.

In Bombay, though the question of erecting a hospital had been under discussion since 1670, no building was constructed until 1676.

“ Commission of instructions, Bombay, 5th March, 1669/70 ”

“ The necessary tender wee have for the health of our people hath putt us on a resolution to build a small hospitall for entertainment of the sick and weake y^e rather because experience hath proved the naturall Disease of the Countrey to be infectious and therefore dangerous to the Garrison, wherefore wee have pitched on a convenient place for the s^d hospitall and desire yo^r to order it to be erected in a frugall way as may consist wth prudence, but though the Comp^{rs} are at v^r charge of building the hospitall, yet those y^t receive the benefit thereof must beare their owne expences otherwise not to be admitted ”

Apparently the hospital was a great success, as is shown by a letter from Bombay to Surat, dated 24th January, 1677 —

“ Our souldiers, thanks be to God, continue very healthfull, for whereas last yeare from October to Ieb^r there died above 100 men, this yeare wee have not lost 15, most of w^{ch} of imposthumation in y^e liver, much of w^{ch} benefit wee must attribute to o^r new hospitall, wee having taken y^e old Court of Judicature for y^t use, it being a thing so highly necessary, for the souldiers do not die by any such fatality concomitant to y^e clime as some vainly imagine, but by there irregularity & want of due attendance when sick For to persons in a flux & w^{ch} is y^e country discises, strong drink and flesh is mortall, w^{ch} to make an English souldier leave of is almost as difficult as to make him divest his nature, nay though present death be laid down before him as the reward of v^r ill gratifying his palate This is the true cause our Bombay bills of mortality have swelled so high, whereas in y^e Hospitall nothing can come in or out wthout passing y^e Doctours eyes y^e wee have great confidence this Hospitall will save yo^r Hon^{rs} some hundred pounds yearly w^{ch} v^r transport of souldiers exacts ”

One way in which money was raised for this hospital is recorded by Crawford Captain Minchin and Mr Hornigold of Bombay had fought a duel, for which they had been suspended and placed under arrest The President ordered their release on payment of a fine of about £4

“ For their better remembrance sake wee doe req^r y^t they be fined 50 Xeraphins a peece towards y^e building v^r new Hospitall w^{ch} wee require you to see performed ”

GROWTH

EIGHTEENTH CENTURY

The First Half of the Eighteenth Century

- A 1714-1717—The Embassy to Delhi
- B The Period 1720-1750.

The Second Half of the Eighteenth Century

1750-1763

- A The Story of John Holwell
- B Some Notes on Other Medical Officers in Calcutta during this Period
- C The Story of William Fullerton and the Patna Massacre

1764—The Foundation of the Services for the Three Presidencies

1786—Formation of the Medical Boards

1788—The Grant of Commissions.

- A General Review of the Condition of the Service in the Eighteenth Century

THE FIRST HALF OF THE EIGHTEENTH CENTURY

A. 1714-1717—THE EMBASSY TO DELHI

THIS important Embassy left Calcutta in April, 1714, following three years' consideration and preparation, under the leadership of Mr John Surman, who was accompanied by Mr John Pratt, and Mr Edward Stephenson, with Dr William Hamilton as Surgeon

“ It being necessary one of our surgeons go up with the gentlemen who go with the present, agreed therefore that Dr Hamilton be sent ”

Mr Stephenson was allowed Rs 350/- and Dr Hamilton Rs 300/- “ to provide themselves with clothes etc. necessary for their proceeding to the Mogull's court with the present ”

Subsequently, Khwaja Sarhad, an Armenian merchant, was appointed in place of Pratt as second member of the party. This man was personally known to the Emperor and it was hoped that he would be able to exert some influence. Actually he was of little use except as an interpreter

The Surgeon, William Hamilton, a cadet of the family of Hamilton of Dalzell, was, in the opinion of Crawford, one of the most famous of all the medical officers who served in India and the one who was the greatest benefactor of his country. The early years of his service did not carry the promise of this future. He came out originally as Surgeon to the frigate *Sherborne*, in which the crew were continually on the edge of mutiny. He quarrelled with the Captain and eventually deserted his ship at Fort St David on 3rd May, 1711, having, in the words of the report submitted by the Captain, “ made his escape in a boat from Cuddalore under false pretences, the ships in the roads are to be searched for him, any other Surgeon of those at Madras would be preferred ” He made his way to Calcutta and was there appointed Second Surgeon on 27th December, 1711. Such irregular appointments of deserters appear to have been not unusual, and Crawford states that towards the end of the eighteenth century certain medical officers were advertised as deserters from ships when they had been actually appointed to the I M S in the same Presidency, *i e* Madras

At the time that the sending of an Embassy was under consideration the throne at Delhi was occupied by Farakh Siyar, who had ascended it in 1712 after having defeated Jahandar Shah in a battle near Agra. The possession of the Indian Empire had been violently contested since the death of Aurungzeb, the last of the Great Moguls, in March of 1707. One of the sons of Aurungzeb, Azam, had seized the throne on the death of his father, but lost it to his eldest brother, Shah Alam, three months later. Shah Alam assumed the title of Bahadur Shah, attacked and killed his other brother Kam Baksh in 1708, and himself died in 1712. His eldest son,

Jahandar Shah, seized the throne, defeated and killed his brothers, and was finally himself defeated by his nephew, Farakh Siyar, who emerged in the end as victor of this bloody and internecine family contest

The Embassy remained a year at Patna which they left on 3rd March, 1715, reaching Delhi on 7th July, 1715. That same month Hamilton was called in to treat the Lord Steward, Taqarab Khan, whose case, however, proved to be hopeless. In August his services were required by the King who suffered from swellings in the groins and again in October for what was feared would develop into a fistula. Hamilton's treatment in both cases was so successful that the marriage of the King to the daughter of Raja Ajit Singh of Jodhpur, which had been delayed for long on account of his illness, was celebrated. Hamilton received rich rewards

" This day (30th November 1715) Doctor Hamilton, as a reward for his Services, received from the King, An Elephant, Horse, Seerpaw (a long robe), Culgee (an aigrette) richly sett with Jewells, and two Large Diamond Rings, with 5000 rupees in ready cash. His Majesty further ordered Buttons for a whole Suit off Cloths, to be made off Gold, and sett with Diamonds and Rubys, As also the handles off all his small instruments off Solid Gold. Cojah Seerhaud having been very Assistant during the King's illness as interpreter, Received a Seerpaw and Elephant " 28

The Embassy set to work with various court officials, by the back-stairs of the palace, to approach the King, hoping that the fact that Khwaja Sarhad was personally known to them would influence him to prepare the way. In these hopes they were disappointed, and it was not until November, 1716, that their petition was submitted in the correct manner to the Wazir. That official immediately approved the requests and after some further delay the farmans were completed, and issued in April, 1717.

A summary of the petition, by Wilson (Early Annals), is quoted by Crawford as follows —

" It contained nineteen articles, of which the first eight related to Bengal. In them the English sought for a fresh imperial *farman*, confirming the previous grant of the right of free trade in Bengal, Bihar, and Orissa, and the *nishan*, allowing them to rent the three villages of Sutanuti, Calcutta, and Govindpur. They further asked that they might be permitted to acquire on similar terms thirty-eight other villages, adjacent to Calcutta, and also some thirteen acres of land for a factory at Patna. They suggested that the town of Calcutta should be renamed Farrukhabdar, and that the three villages, with the thirty-eight new villages, should be combined into a single *pargana* to be called Farrukhabad. They desired permission to buy goods at Hughli without hindrance, and freedom generally from vexatious cesses and dues. They required that three days a week should be set apart at the Murshidabad Mint for coining bullion, that the *diwan* should be content with copies of their grants and not insist on seeing the originals, and that the government should take steps to prevent the local robberies to which trade was everywhere exposed. Three articles followed of a more general nature, praying that Madras rupees might pass current like those of Surat, that help might be given to English ships in distress at sea, and that absconding servants or debtors of the Company should be handed over to the Company's authorities. Turning to the Coromandel Coast, the English not only asked that their former commercial privileges should be confirmed, and, in particular, that the five villages of Madras and the territory of Fort St. David should be granted them again, but also sought to acquire villages in Vizagapatam, and the island of Divi near Masulipatam. The last three articles were concerned with the western side of India,

and more especially with Surat. These articles demanded that the trade at that port, in consideration of the annual payment of a lump sum, should be declared custom free, that a site should be given for a factory, and a large plot of ground for a garden, and that the passes of the English chief should protect the Company's agents from being molested."

These requests were granted practically in full. Though the records do not indicate that Hamilton asked the King to grant the petition, there is no doubt that his close relationship to the Court and the respect in which he was held must have had a definite, and possibly a decisive, influence. The other determining factor was a report which was received during the negotiations from the Governor of Surat that the English proposed to withdraw from that port. This decision, if it had been acted upon, would have had a serious effect upon the Imperial Revenues.

On 30th May, 1717, the Embassy took leave of the King. They left Delhi on 18th July of that year, and arrived in Calcutta on 20th November, where they were received by the President and Council with great pomp.

During this prolonged stay in the Imperial City Hamilton had treated many of the most important officials of the Court, and their families, and, when the Embassy took their leave, the King expressed his intention of retaining him as his personal Surgeon. Hamilton, however, was unwilling to take this post, and the King was only persuaded to release him on his promising that, after having made a visit to Europe, he would return to Delhi. Hamilton's refusal appears to have been most emphatic.

"In the Evening, Mr Surman went to Salabut Caun (who went nott to the Durbar to-day) and After acquainting him with the matter, begg'd he would use his utmost Endeavours with Caundora to gett the Doctor dispatched, for that he would by no means be perswaded to Stay, That all the ffavours and riches the King could heap on him would prove no manner off Allurements,—that iff the King had a mind to keep him he must send Goorzeburdars (macebearer) and putt Irons on his Leggs, and that Even then he would nott so much as accept off the Kings bread, much less his service. The Old Syud Asked two or three times whether nothing could prevail, but when he was answered No. He promised to be very importunate with Caundora and Even to fall at his ffeett to Obtain itt."

"Mr Hamilton being entirely averse to obey the King's orders by his stay, unless fforced thereto, It is our business to weigh this Affair in respect to Our Honourable Masters. We find few dare speak to the King for his Clearance. On the other side we are satisfied That should he be kept by force, His Stay would be no longer than the first opportunity to Elope. For such a burning desire reigns in him after his own Country, that neither promises nor threats can avail any thing."

"The King return'd an Answer which came out the 6th as follows ' Since he is privy to my nakedness and perfectly understands his business, I wou'd very fain have kept him, and given him whatsoever he shou'd have ask'd, but seeing he can't be brought on any Terms to be content, I agree it, and on condition that after he has gone to Europe, procur'd such Medicines as are not to be got here, and scen his Wife and Children, he return to visit the Court once more, left him go. ' We hope in God this Troublesome Business is now blown over."

Meanwhile, the Court of Directors, who had somewhat belatedly heard of Hamilton's earlier exploits, ordered his discharge from their service on his return

from the Embassy Sir William Hunter, in "The Thackerneys in India, and some Calcutta Graves," comments on this action on the part of the Directors —

"As a matter of fact, while he was curing the Delhi Emperor at the risk of his own life, if the operation went wrong, and exhausting his credit with his august patient to obtain indulgence for the English Company, his Honourable Masters had, in a fit of parsimony on the other side of the globe, done away with his appointment, and ordered 'the discharge of Dr Hamilton on his return from Court' From this ingratitude the Directors were spared partly by the fear of losing Hamilton's influence with the Emperor, and partly by Hamilton's death They wrote grudgingly in their Bengal despatch of January, 1717 'Finding by the letters before us how successful he has been in curing the Great Mogul, which very probably will help forward our negotiations and get an easier grant of some of our requests, we now say that, if Dr Hamilton shall desire a continuance in our service, you readily consent to it, and let him see you are sensible of the benefit accruing to us, if you find he any hath, by his undertaking and accomplishing that cure' "

Hamilton was at that time a sick man, and, realising that his end was near, he made his will on 27th October, 1717, appointing John Surman as his trustee In this will he remembered all the members of the Embassy, leaving to Surman the large diamond ring given him by King "Furrukseer" and his culgie

He died in Calcutta on 4th December, 1717, within a fortnight of the return of the Embassy to Calcutta and is buried in the churchyard where now stands the Church of St John On the tombstone is an inscription in English and in Persian —

"William Hamilton, Physician, servant of the English Company, who had gone along with the English Ambassador to the Illustrious Presence and had raised his name high in the four quarters of the world by reason of the cure of the King of Kings, the Asylum of the World, Muhammid Farakh Siyar the Victorious, with a thousand difficulties having obtained, from the Court of the Asylum of the World, leave of absence to his native land, by the decree of God on the 4th December 1717, died in Calcutta, and in this place was buried "

The Emperor, on hearing of his death, sent a special messenger to Calcutta to ascertain if it was true, fearing that the account of it had been put out to enable Hamilton to escape from the promise he had made to return to Delhi

Farakh Siyar was himself deposed and assassinated in 1719

B THE PERIOD 1720-1750

During this period the Company maintained three chief stations at Bombay, Madras and Calcutta with, in addition, a few minor up-country factories Crawford was unable to find much of interest to record during these years beyond the names of medical officers who were serving in India at the time and a few remarks on them, which were generally not to their credit It seems that the addiction to the bottle which had marked their predecessors in the seventeenth century still kept a considerable hold upon certain members of the Company's medical staff

Of Gregorius Meisters, Surgeon at Surat in 1726-36, it is recorded in a letter dated 10th October, 1737 —

“ They complain of their Surgeon Mr Meisters whose Slenderous & abusive Tongue is grown intolerable & as he is not employ'd by any One person of the Factory having by Excessive drinking disqualified himself for the station he bears & considering that he may engage them in Disputes with the Government they desire he may be removed as it is not fit he should remain in that place ”

He was discharged from the service and refused the offer of a pension. In 1745 he appears to have been acting as a gunpowder contractor to the Company.

Two of the Bombay Surgeons are noted as having acted collaterally as Mayor of Bombay, the salary of which was £67 10s od. a year in addition to their pay as Surgeons—Henry Compton, 1737, and Michael Weston, 1743.

During the period under discussion the Bombay Government began to appoint medical officers to the Indian Navy. This Navy came gradually into existence from 1612 when Captain Best defeated the Portuguese fleet off Surat. Thereafter, a small fleet was maintained at Surat for defensive purposes and, when Bombay became the seat of Government in 1687, the fleet changed their Headquarters and were known as the Bombay Marine. Only the larger ships carried Medical Officers and of these the largest might carry as many as three, a Surgeon and two Mates. An Administrative Order of 4th April, 1767, runs as follows—

“ That the Surgeons have fifty Rupees per month and a Servant, and as a further encouragement that they be removed from the Marine to the Subordinate Factories according to their Seniority, and a Service bysen, and from thence to the Presidency ”

Few men served for long in the Navy, the majority either being transferred to the Land Service or taking their discharge after a few years.

It is agreeable to learn from Grose's “ A Voyage to the East Indies ” that, on his arrival in Bombay in 1750, he found that public health had considerably improved and a better type of Surgeon was becoming available.

Not however without taking into account, the place being provided with more skilful physicians than formerly, when there was less niceness in the choice of them—Surgeons, and Surgeon mates of ships, and those none of the expertest, used to be admitted almost without any, or but a superficial examination, though in so tender a point, as that of the life of subjects, always precious—and surely more so, where they are so difficult to recruit. The same negligence was also observed with respect to the pillics, and other armed vessels of the company in those parts, and to say the truth, the pay was too slender to invite into such service any capable persons. Here I cannot omit inserting, though digressively, one instance of a wanton disregard to that material point, of the truth of which I have been credibly assured. Mr Phipps, one of the former governors, on examining the marine establishment of Bombay, wherein he proposed making retrenchments, by way of currying favor with his masters at home, which is often done, by the falsest and most ruinous economy, observed the surgeon's pay, rated at 42 rupees per month, which at the usual way of reckoning of a rupee for half a crown, was just five guineas. ‘ What, says he, there must be some mistake, the figures are transposed, it must be 24 instead of 42 ’ and for the sake of this, in every sense a barbarous joke, he, with a dash of his pen, curtailed the pay accordingly—but surely this was rather cutting into the quick, than prying off excrescences.

“ Whatever may be the reason, the point is certain, that the climate is no longer so fatal to the English inhabitants as it used to be, and incomparably more healthy than many of our other settlements in India ”

When Edward Bulkley resigned the post of Senior Surgeon at Fort St. George in Madras in 1708, he was succeeded by Richard Chadsby and he, in his turn, by Thomas Robson. With these men the services enter upon a period of greater moral worth and prosperity. Robson's widow was able to invest eight thousand pagodas (£2,800) in a Company's bond, and Andrew Pichier, Second Surgeon who died in 1729, made provision for his daughter of seven thousand pagodas. We read less and less of "lewdness and debauchery" and more of capable and deserving men, of diligence and devotion to duty.

Andrew Munro was the outstanding medical figure on the Coast prior to 1760. He was appointed Surgeon's Mate at Fort St. George in September, 1724, and Surgeon at Fort St. David in September, 1733. In February, 1741, he became Full Surgeon at Fort St. George and remained in that post for fifteen years. In 1754 he served as Mayor of Madras. From the following Consultation of 28th December, 1756, it is interesting to note the custom by which a Surgeon, who had become too old to act as such, could become a Physician.¹

"The President informs the Board that Mr. Andrew Munro had been to acquaint him that his Age and great Infirmities had render'd him quite unable to go thro' the Fatigue of the Surgeon's employ, That, being desirous of giving all the Assistance in his Power, he often went abroad when he was more indisposed than many of his Patients, and that he found himself so little able to do the duty necessary at the Hospital that he was obliged, for the good of the People, to make known his infirmities.

"The President adds that, upon Mr. Munro's leaving him, he had thought of writing for Mr. Wilsson, who is the next Surgeon, and now at Trichinopoly, to come hither to supply his Place, to give Mr. Munro Liberty to retire from all Business, and to continue to him his Salary. But considering afterwards the great merit of this Gentleman, the many Obligations the Inhabitants owe to him, and the great Opinion most of the Gentlemen in the Settlement have of his Abilities. He thought something more should be done for him as a Reward for his past Services, and that the Town should not be deprived of the Advice of so able a Man. He proposes and requests of the Board that they will call up one of the other Surgeons to assist Mr. Turing in the Hospital, and that Mr. Munro may be appointed the Company's Physician at this Settlement *** And that the Company may be address'd On this subject, Requesting their Confirmation hereof, and a suitable Addition to his Salary, All which the Board unanimously agree to."

Of this Crawford observes cynically that the office of Physician to the Company was apparently a sinecure. Munro died at Madras, after thirty-three years' service, on 26th October, 1757. His wife, Francis Mary Munro, survived until 1771. Of their four children, Robert Duncan returned to Madras as a Writer in 1765, and Margaret Aurora married her cousin, George Smith, a free Merchant, in 1769.

Munro was succeeded as Chief Surgeon by Robert Turing, the fourth son of Sir Robert Turing of Foveran, in Aberdeenshire, third Baronet, who in 1764, was appointed Storekeeper-General. The fact that the name of Robert Turing should appear simultaneously in the pages of Burke and in the list of Surgeons of the Company in Madras speaks volumes for the improved status both of the medical profession generally and particularly of the medical service of the Company in the early eighteenth century.

The record of the earlier surgeons in the Bay during this period is little more than one of appointments and resignations, though there is a note that Surgeon Richard Harvey, in 1720, acted as padre in addition to his medical duties.

Give Dr Harvey for officiating when had no Minister 400 Rups as per Consultation 18th 6th 1720.

In 1733 George Gray came to Bengal from Madras, and was appointed as Surgeon to the Factory at Kasimbazar, becoming Chief Surgeon at Fort William in 1741. In 1753 he held the office of Alderman of Calcutta. His son came out as a Writer in 1755, and both father and son were taken prisoner at the capture of the Fort. They escaped to Futta and joined Dr Gray's second wife and infant son. Dr Gray, Sailor, resigned in 1760 and died in 1781, leaving a very considerable estate. His son, George Gray Junior, became Resident at Cuttack in 1758 and joined the Bengal Council in 1765. He violently opposed Clive in his attempts to reform the Civil Service and resigned at the meeting of Council held on 11th November, 1765.

Another father and son who served together in Bengal during this period were both named John Knox. They both served as Assistant Surgeons and the father was sometimes known as Pahry (probably Patna) Knox. They were both in Calcutta during the siege and afterwards conducted a brisk sideline in business, the father running an arrack firm while the son acted as a contractor to the Company. The *Calcutta Gazette* of 10th October, 1815, gives the following account of the death of the widow of Dr Knox —

"On the 12th current, Mrs Knox, aged 74 years. She is the 1st of those who survived the 17th June of the Black Hole in 1756. She was at that time fourteen years of age, and the wife of Dr John Knox. The day before she died, she went out to take an airing in her plankeen, and perceived her fault in nature to the last."

Crawford disputes the statement that she was in the Black Hole, but thinks that she may have married the younger Dr Knox after the siege.

In addition to the Company's doctors, there appear to have been private practitioners in Calcutta at this time.

Mr Bland brought in a Doctor's bill paid by Mrs Waldo for attendance and physic to her husband in his sickness, our Doctor being sick at that time. Ordered that the Buxie (pay-master) pay the same.

There appear to have been no postings of Surgeons to the out-station factories in Bengal until 1720 though, after that date, the Service seems to have become more organised and there are frequent references to Surgeons at Anjengo, Kasimbazar, Dacca and Patna. In 1742, an order was passed that all servants of the Company were entitled to free medical attendance except for venereal disease.

Crawford gives lists, evidently collected with great care and research, of the names and dates of a large number of the Surgeons in India during this period, though he states that "the lists are, of course, imperfect, especially as regards dates. They

do not include the names of men appointed as Surgeon's Mates, who never rose to the rank of full surgeon, nor of those surgeons, towards the end of the period, who spent all their service in the army, or at the factories subordinate to the respective Presidency towns." The list for Bombay between 1720 and 1770 contains twenty-two names, that for Madras, 1710 to 1770, sixteen names; and that for Calcutta, 1713 to 1770, twenty-five names

When the regular service was formed, in 1763, the posts of Head Surgeons in the Presidency towns were considered to be the most important in the Service, and those appointments developed eventually into administrative posts. In 1786 the officers holding those posts became members of the Medical Boards. Of those Surgeons whose names occur on the lists mentioned above, one, James Ellis, continued in the Bengal Service so late as 1786, and became the first President of the Calcutta Board, after serving for three years as Surgeon-General. He resigned in 1789 after thirty years' service, and died at sea on the voyage home.

THE SECOND HALF OF THE EIGHTEENTH CENTURY

1750-1763—A. THE STORY OF JOHN HOLWELL

John Zephaniah Holwell was born in Dublin in 1711, the son of a London Merchant, and grandson of John Holwell, at one time Astronomer Royal. He sailed for Calcutta in the service of the Company in 1732. After various postings he came eventually to Calcutta in 1736, and was soon afterwards elected Alderman, and subsequently on two occasions to act as Mayor. In 1740 he is mentioned as Surgeon at the Calcutta Hospital, but was not made full Surgeon there until 1749, succeeding Surgeon William Lindsay who died in that year. He held the appointment for nine months and then resigned in order to proceed to England.

Returning, in 1752, to Calcutta as a covenanted civilian, and as twelfth in Council, he held the office of Zemindar of Calcutta, which combined the duties of Chief of Police and Collector, until the capture of Calcutta in 1756. He was a man of extreme energy and pressed for reforms in many directions, even as regards sanitation. In 1755 he asked for leave to repair and enclose the Red Tank round which Dalhousie Square was later built, and to prohibit bathing of men and horses in it. This tank was considered until the middle of the nineteenth century to afford the best drinking water in the city.

In June of 1756 Siraj-ud-daulah, Nawab of Bengal, laid siege to and captured Calcutta. Of the eleven members of Council four, including Roger Drake, the Governor, fled to the ships. Holwell, Pearkes and Eyre remained at their posts. The four other members were not in Calcutta at the time. After the surrender

PLATE IV



JOHN ZEPHANIAH HOWELL, I R S

[Facing p. 56]



GROWTH

of the Fort, Pearkes made his escape, while Holwell and Eyre endured the agony in the Black Hole, during which Eyre died.

Concerning his desertion of his post Drake wrote—

“ To justify my quitting the garrison I shall not attempt.” 29

and William Looke, a junior Civilian who behaved with great gallantry during siege, says of the same episode—

“ Upon the Governor going off, several muskets were fired at him, but none were high enough to take place.”

Drake is said, though the story is open to doubt, to have made the excuse that he deserted because he was a Quaker and it was against his religious principles to fight.

“ As soon as it was known the Governor had left the Factory, the gate towards the river was immediately locked to prevent my further desertion, and the general voice of the garrison called for Mr Holwell to take the charge of their defence upon him. A Council being hastily summoned Mr Peirce, the Governor's son-in-law, waived his right to the Government in favour of Mr Holwell, who thereupon acted in all respects as Commander in Chief, and exerted his utmost to encourage every one.” 30

Holwell was compelled to surrender the Fort on the afternoon of the 20th of June, 1756. “ The fifth and last act of our Tragedy of Errors.” He had had a chance to escape after the final surrender in a boat provided for him by Leech, the Company's smith—

“ if I would follow him through a passage few were acquainted with, and by which he had then entered. (This might easily have been accomplished, as the guard put over us took but very slight notice of us.) I thought him in the best terms I was able, but told him it was a step I could not prevail on myself to take, as I should thereby very ill repay the attachment the gentlemen and the party on land shown to me, and that I was resolved to share their fate, be it what it would, but pressed him to secure his own escape without loss of time, to which he gallantly replied that ‘ then he was resolved to share mine, and would not leave me.’ ” 31

The confinement of the prisoners in the Black Hole which followed the surrender was not, according to Holwell, on the direct orders of the Nawab. It seems to have been accidental and carried out under the orders of subordinates. Besides Holwell, six other Surgeons were present in Calcutta at that time, George Gray and William Fullerton, Surgeons of the Settlement, William Inglis, the two John Knox's mentioned earlier in these papers and John Taylor. Fullerton was on board the ships at the time of the surrender, having quite probably escorted the wives and families to safety.

Holwell repeatedly offered bribes to the guards to release the prisoners in the Black Hole, but without success. He was one of the twenty-three survivors, and as he was known to be an important person he was sent in chains to Murshidabad, and only released towards the end of 1756. He sailed for England in February, 1757,

and during the voyage of five months wrote "A genuine narrative of the deplorable death of the English Gentlemen and others, who were suffocated in the Black Hole in Fort William," which was published in 1758. He erected, at his own expense, a monument to the victims of the Black Hole near the spot where their bodies were flung into the ditch which ran round the Fort. This monument was pulled down in 1821, but a facsimile was put up in 1902 at the N W corner of Dalhousie Street, almost on the same spot.

On his return to India in 1758 he rose rapidly in place in the Council and, when Clive resigned, held as a temporary measure the Governorship of Bengal for six months, handing over to Henry Vansittart of the Madras Civil Service in 1760, but retaining his seat as second in Council for a further two months. He resigned and left India for good on 18th March, 1761.

He lived for another thirty-eight years, being elected F R S in 1767 (the second medical officer of the Company to receive that honour), and died at Harrow on 5th November, 1798 at the age of 87, which in itself was a remarkable achievement considering all that he had survived.

Holwell was a keen student of the religions and customs of Bengal and made a study of Indian antiquities. His attitude towards the people of India was sympathetic.

"Mr Holwell appears to have been the only Member of Council who had any real knowledge of the natives of the country, and his reforms in the administration of the law in Calcutta had endeared him to them, though they had rendered him unpopular with many of the Europeans whose gains were interfered with." 32

His many publications show the working of an enquiring mind, and range from a disquisition "On a new Species of Oak" and a "Dissertation on the Origin of Intelligent Beings and on Divine Providence" to "A History of the Succession to the Empire of Indostan" and "A New Experiment for the Prevention of Crimes."

B SOME NOTES ON OTHER MEDICAL OFFICERS IN CALCUTTA DURING THIS PERIOD

Some account has already been given of George Gray and the two John Know's, and the career of William Fullerton is reserved for a later note.

William Inglis was appointed Surgeon's Mate at Calcutta in November, 1753. In 1754 he went to England as Surgeon of the *Falmouth* and, on his return in 1755, was reappointed to Calcutta. He appears to have escaped after the siege, but to have died at Iulta.

John Taylor was transferred to Bengal from Madras in 1753 and appointed Surgeon's Mate at Fort William. He was in the Fort up to the surrender and then escaped to Iulta. He eventually rose in 1771 to be Head Surgeon.

There were at least three medical officers serving outside Calcutta, Nathaniel Wilson, William Forth and John Bristow. Of these the career of John Bristow

shows once again that, in those days, a Surgeon of the Company was often required to turn his hand to other things than medicine. The first record concerning him is in the register of the parish of St Anne, on the occasion of his marriage to Elizabeth Mackey, on 18th August, 1750. He had served as Surgeon's Mate on the *Princess Amelia* which was captured by the French. He lost all his property and was a prisoner for twenty-three months and suffered great hardship, especially in the siege of Pondicherry. He was appointed Steward of the Calcutta Hospital in February, 1751, and, in July of that year, succeeded Fullerton as Mate at the Hospital. In 1752 he returned to England but was back again in 1756 in charge of a small factory near Balasore. In 1757 he was appointed as Resident at Cuttack, but did not make much of a success of that office.

“ As Mr Bristow's behaviour at Cuttack is not approved of by the Board, and as it is esteemed requisite at this juncture to have a person of capacity at that place, and one who understands the language, agreed that Mr George Gray, junior, be appointed Resident at Cuttack, and that Mr Bristow be recalled ” 33

We next find him in the employment of the Raja of Gudgeputtee and commanding forty Europeans, with four guns, meanwhile complaining to the Company that the Raja was in his debt for a month's pay and that he had been obliged to advance to his soldiers himself one thousand, six hundred and eighty-eight rupees “ which misfortunate he hopes we will take into consideration ” In August, 1760, when acting as Resident at Rajamandri, he was again taken prisoner by the French and put in a bill for allowances. He died in Calcutta in November, 1761.

Another many-sided doctor of those days was Archibald Keir, who was Surgeon to the relieving force which was sent from Madras to Fulta after the capture of Calcutta in 1756. While in Fulta, he acted as Secretary to the Council, and accepted a commission as Lieutenant, rising to the rank of Captain in 1758, after which he resigned and went home. On returning to India he settled in Patna as a free merchant, engaged extensively in transactions in salt and owned the ship *Thetis* at Cochin. He rejoined the Army in 1766 as a Captain for two years at the time of the Officers' Mutiny in that year. In 1779 he became interested in mining, having purchased the mines of Ramgur from the Raja of that district. Finally, after thirty years absence, he applied for readmission to the Medical Service in 1785. In this he does not appear to have been successful.

Tyso Saul Hancock is shown as a full Surgeon at Fort St David in 1754, and in 1758 as Surgeon at Fort St George. In 1759, he was permitted to remove to Bengal and, when Fullerton resigned, he became Surgeon at Fort William. He was an intimate friend both of Clive and of Warren Hastings. He resigned his appointment in 1761 on account of failing eyesight, but continued to live for a further ten years in Calcutta as a merchant. He died in November, 1775, at the age of sixty-five years and was buried in South Park Street Cemetery. His wife, Philadelphia, was an aunt of Jane Austen, the novelist.

C THE STORY OF WILLIAM FULLERTON AND THE PATNA MASSACRE

Doctor William Fullerton was born in the parish of Symington in the county of Ayrshire and came out to India about 1745. He was appointed to succeed Holwell as Second Surgeon at Fort William in 1750, and held this post for more than ten years, being present at the siege in June, 1756, though at the time of the surrender he was with the ships, presumably escorting the women and children to safety. In 1757 he was elected Mayor of Calcutta. In 1760 we find him in Bihar on a temporary transfer, being succeeded in Calcutta by Mr Hancock. Fullerton appears to have had a large and lucrative practice in Calcutta for, in the list of payments to Europeans after the capture of Calcutta, he is shown as having received compensation of more than 2 lakhs of rupees (more than £30,000 in those days). He appears to have speculated successfully in saltpetre in Bihar.

Crawford describes him as the first member of the Indian Medical Service, since he was certainly serving for over two years after that service was regularly constituted in 1764. In a footnote he adds the names of two other officers who were also serving at that date. Robert Turing, who, in 1764, was Surgeon and Medical Storekeeper-General in Madras, and Robert Trotter, who, in 1764, was serving at Anjengo. He adds, regarding Fullerton, that "The Service may well be proud of him as their first representative. Throughout the twenty years of his career, we hear much in his favour, and little against him."

At the commencement of 1760 the Emperor Shah Alam who had just come to the Imperial throne declared war on Mir Muhammed Qasim, Nawab of Bengal. He invaded Bihar and defeated the troops of the Nawab, who were assisted by a few British sepoys, on 9th February, near Patna.

"The only European officer now surviving was Dr W Fullerton, the Surgeon of the Agency, who assumed the command. Finding that the day was completely lost, this little party commenced their retreat to the city, surrounded by the enemy, but by the coolness and steadiness of their conduct keeping the latter at a respectful distance. One of the two gun-carriages having broken down, they were compelled to spike the piece and leave it on the field, but the tumbril of the other having upset, Dr Fullerton halted the party, deliberately righted it, and then resumed his march, by their cool and daring behaviour, this remnant of the party succeeded in making good their retreat to Patna."

Whereupon the troops of the Emperor laid siege to Patna and Fullerton again distinguished himself. Later, in the same year, he was back again in Calcutta as Second Surgeon but, in September, 1760, put in an application to resign from the service and return to England. He appears to have fallen foul of his superiors on account of his friendship with certain Indian gentlemen, and was under suspicion of having cooked the evidence when, on account of his masterly knowledge of the language, he was employed as interpreter in an inquiry into the conduct of one Nanda Kumar at Patna. He left India in the spring of 1761 with the following valediction from Henry Vansittart, Governor of Bengal, as recorded in a letter dated 16th January, 1761:

“ Para 7 Mr Fullerton has taken his passage home on the *Latham* He is suspected of encouraging the Correspondence to promote the disaffection of ye Burdwan Rajah

“ Para 8 Mr Fullerton is a great Bane to Society and the Company’s Service, so much is said of him that he may not on any account be suffer’d to return His Rect for destroying of Parties is not to give himself any thot abot opposing them ”

In spite of the Governor’s spiteful remarks so curiously spelt, Fullerton was back again in Bengal and serving as Surgeon at Patna in June, 1763, which is the more remarkable in that Vansittart was still acting as Governor

In 1761 the Bengal Council dethroned Mir Jafar, Nawab of Bengal, and installed his son-in-law, Mir Muhammed Qasim, in that office The original concession made to the Company of the release of their merchandise from transit dues which had been given by the Emperor had been subject to gross abuse by senior servants of the Company, who had run their private trade through under this concession with the result that native merchants found that it was impossible for them to compete in the markets Mir Qasim, in order to combat this abuse and finding other methods of no use, abolished all concessions both public and private and placed all inland trade on an equal footing The Calcutta Council, seeing their ill-gotten gains in danger of disappearing, protested vigorously that the Nawab had exceeded his powers, claiming that the concession came from the Emperor and could only be rescinded by him They dispatched two of their members in April, 1763, to present an ultimatum to the Nawab After prolonged negotiations the Nawab detained one of these representatives as hostage, and allowed the other to proceed to Calcutta

On 25th June the Chief of the Agency at Patna, William Ellis, a hot-headed and violent man, who was among those most opposed to the policy of the Nawab, determined to seize the fort at Patna He captured the city but not the Fort Instead, his troops dispersed to plunder, while the officers returned to the Factory for breakfast ! A small party of the Nawab’s troops arriving from Monghir about noon soon drove the English troops from the city, and a retreat to Oudh, rendered difficult by floods and the defection of their sepoys, was undertaken After a few days, the British were surrounded and defeated at Manjhi on July 1st and, though they took to their boats, they were compelled to surrender on their way down the river Ellis and the other prisoners were brought to Patna on 6th July and sent on to Monghir on 8th July Fullerton had been sent by Ellis on 2nd July to Patna with a letter to the Commander of the Nawab’s forces, and he was consequently not sent to Monghir until the 16th July When the prisoners were sent in September from Monghir to Patna, he was confined separately in the Fort

The Nawab meanwhile, having reaped such success at Patna, issued orders to seize all the English in Bengal The Factory at Kasimbazar was attacked and captured, and the officials taken as prisoners to Monghir On the 7th July the Council declared war on the Nawab, and, on the 25th, reinstated Mir Jafar on the throne A force was dispatched which completely defeated the Nawab’s troops at Katwa on 19th July, at Gharra on 2nd August and at Undwa Nala, near Rajmahal, on 5th September

Monghir was taken without resistance on 1st October, and Patna on the 6th November. The Nawab fled into Oudh. The surrender of Monghir sealed the fate of the prisoners, who were, on the night of the 5th October, murdered under the orders of the Nawab, by the infamous executioner Walter Reinholdt, known as Somru. The only officer spared was Fullerton, who was in a separate place of confinement and allowed to live in the Dutch Factory. He had thus the remarkable experience that, for a second time, he was the only surviving officer of the force to which he had belonged. In this massacre sixteen civilians, including two members of Council, twenty-four officers of the Army, three Surgeons and eight English merchants serving as officers lost their lives—in all fifty-one.

Of the members of Council—Ellis and Hay—the following statement was made before the Committee of the House of Commons which investigated the massacre —

“ After the battle of Undwa Nala Mir Qasim wrote to Major Adams, telling him that if he advanced further all the English prisoners would be killed. Adams then wrote to Ellis and Hay, recommending them to purchase their liberty at any price. Their answer was, that their countrymen need not think of them and that they desired that no consideration of their situation should delay the progress of the army ”

Of one of the Factors, Henry Lushington, the Commander of the British Forces, Major Adams, wrote —

“ Lushington was one of the survivors of the Black Hole. Under Clive's orders, he wrote out the Red Treaty for Omichand, and forged Admiral Watson's name to it. He made a fine fight at the massacre ”

Fullerton appears, according to his own account, to have interceded unsuccessfully for the prisoners during the massacre, and to have made his own escape on 25th October, joining Major Adams the same night.

At least four medical officers perished in this campaign. Clement Crooke, John Ham, William Anderson and Peter Campbell. Of these no details of any interest remain, though a copy of Anderson's Diary is preserved in the records at the India Office, and in this is included a pathetic letter from him to John Davidson, Surgeon at Chittagong, written a few days before his murder.

“ Patna, 6th October 1763

“ Dear Davidson — Since my last, His Excellency has been completely defeated, and, in consequence, obliged to retreat to Jaffier Cawn's Gardens yesterday, and purposes coming into the City to-day. Sumroo, with the Sepoys, arrived here last night, and I suppose to effect his wicked designs, for last night Mr Ellis and 48 Gentlemen were murdered, and as about an equal number remains of soldiers and us, I expect my Fate this Night. Dear Davidson, this is no surprise to me, for I have all along expected it. I must therefore as a dying Man, request of you to collect and remit home my Fortune as soon as possible, and write home a comforting Letter to my Father and Mother. Let them know I die bravely, as a Christian ought, for I fear not him who can kill the Body, and nothing more, but rejoice in hopes of a future Existence through the merits of my Saviour. O Davidson be not over anxious for a Fortune, let mediocrity satisfy you, and go home and comfort your friends and mine. Endeavour to recover Mr Ellis's money if possible, but I believe the 14,000 Rupees with Hancock is safe, which will be a help for my poor Friends. You have full

Instructions in my other papers You may give Nicola, if he comes to you, 200 Rs and, *if you can*, provide for him, for he is a good Boy Now Dear Friend I take my leave of you, hoping that that Friendship will still subsist—for why may there not be the same friendship in a future State,—Friendship, founded on Virtue, must subsist for ever

“ Fare you well, and may God give you Satisfaction in Life, and Joy in Death —Yours,
William Anderson ”

The Nicola referred to in this letter was a dresser who served under Anderson, in which service he ran a great risk of his life He must have taken Anderson's letters and diary to Davidson Crawford found another reference to this lad in a memorial by Assistant Surgeon James Kerr making, among other charges regarding the employment of unqualified men, the statement that a black slave boy named Nicholas had been appointed Assistant Surgeon on Rs 130/- a month, whereas he (Kerr) had served for seven years on Rs 120. The Surgeon-General remarked on this that, for his services to the prisoners at Patna the boy was granted the pay and batta of an Assistant Surgeon, but that his name was never on their list, nor was he ever considered as one of them.

At the beginning of the war there were about three hundred European soldiers, and it is stated that of these one hundred and twenty perished in the massacre The few ladies and children at Patna, though taken prisoner, appear not to have been killed

Apart from Fullerton, the ladies and the children, the only prisoners who survived the massacre were four sergeants. The Nawab, Mir Qasim, who had fled to Oudh, after the massacre, influenced Siraj-ud-daulah to espouse his cause, and, in his company, to invade Bengal There they were joined by the Emperor Shah Alam The united force was, however, defeated by Major Carnac at Patna on 3rd May and finally routed by Major Hector Munro at Buxar on 23rd October Mir Qasim eventually died in poverty in Delhi in 1777 while Carnac became Commander-in-Chief in 1765

Fullerton remained at Patna for two years after the massacre The last years of his service were troubled by further enquiries into the conduct of the Nanda Kumar concerning whom he had previously earned such severe strictures from the Governor of Bengal This man had written a letter to Raja Balwant Singh of Benares advising him against an alliance with the British. Fullerton, knowing of this letter, had not reported it to the Committee of Inquiry, of which he was a member. The object of the Committee was to produce evidence to remove Nanda Kumar from the service of the Nawab, and the Government were not satisfied with the manner in which Fullerton had conducted it. He was called to Calcutta for further inquiry. The question at issue is set out in a letter from Carnac

“ It is since come to light that Mr Fullerton had seen the very letter said to be wrote to Bulwant Sing by Nundkomar, which was the foundation of the charge against him I cannot conceive how he can reconcile with his duty to the Company the concealing such a letter, yet heartily wish he may be able to clear up a conduct which is at present so mysterious His keeping this a secret

from me is the more extraordinary, as no one was better acquainted how much I had this enquiry at heart, a great intimacy having always subsisted between us, and I had reposed such a particular confidence in him as to have requested his attendance on me as Interpreter, till the arrival of Capt Swinton " 34

Fullerton put up the defence that the letter was shown to him by Batson, the Chief of the Patna Agency, who asked him to keep it secret and to try and find out whose was the handwriting This he said he did not find out until after the completion of the enquiry

Nevertheless, he was censured by the Council and, feeling that he could no longer remain with honour in the service, he resigned and left India in April, 1766. Of his departure his friend Saiyid Ghulam Husain, the author of the " Sair-ul-Mutakherin," wrote —

" This gentleman, after taking an affectionat leave of his friends by whom he was exceedingly regretted, set out for his country, from which he promised to come back again, on his being able to obtain certain conditions and stipulations for himself It appears that his intention did not tally with the decrees of providence, for he has not yet appeared, although there is intelligence of his being alive and in health Wherever he may be, God almighty preserve him in peace of mind "

Fullerton enjoyed his retirement for about forty years He died in October, 1805, at Rosemount in the parish in which he had been born

1764—THE FOUNDATION OF THE SERVICES FOR THE THREE PRESIDENCIES

On an order from Fort William passed on 20th October, 1763, and coming into effect on 1st January, 1764, all officers who were at that time serving in the Presidency of Bengal were incorporated into a regular Medical Service with fixed grades and definite rules for promotion

" At a consultation present
The Honble Henry Vansittart, Esq President,
John Carnac, Esq
Warren Hastings, Esq
Randolph Marriott, Esq
Hugh Watts, Esq

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" As there has never been any proper Establishment settled for the Appointment and Succession of the Surgeons employed under this Presidency

" It is now agreed that the following Plan shall be established regulating their Number, Rank, and Succession and Appointments and that it shall take place the 1st Jany 1764—vizt

" 4 Head Surgeons to reside at Calcutta and have the Privilege of Company's Servants The two first to have the Hospital Contract

" 8 Surgeons of which the four eldest to be stationed at the Factories of Patna, Cossimbuzar, Chittagong and Dacca. And the other four to be Surgeons of the Army, and the whole of this Rank to succeed in Rotation to be Head Surgeons at Calcutta

" 28 Surgeon Mates who are to succeed in their Seniority to be Surgeons. Of these the eight eldest upon the list to live in Calcutta, the next eight to be Surgeons Mates of the Army, and the other twelve to be Surgeon Mates of the Seapoys, one to each Battalion

" Head Surgeons and Surgeon at the Subordinations and the Army to have ten shillings a Day Pay, and the latter when in the Field to draw Captain's Batta

" The Surgeon Mate at Calcutta to have 7/6 per Day each, those of Army and Seapoys 5/- a Day, and Lieutenants Batta when in the Field

" Agreed that we write to the Court of Directors to send Us out some Surgeons Mates to complete the Establishment "

In the report on this matter sent to the Court of Directors in London, the twenty eight Mate appear as only twelve. The Court were asked to sanction these appointments and to send out men to fill them

The Madras Medical Service was constituted in 1767 with fifteen Surgeons and thirteen Mates, and the Bombay Medical Service in 1779 with twenty-seven Surgeons and Mate. In this manner all the Surgeons employed by the East India Company were included under the new provisions

Crawford refers to a tradition " which exists, or used to exist, that in the early days of the I.M.S., after its foundation on 1st January, 1764, men appointed to the Service held commission as combatant officers, in addition to their warrants as Assistant Surgeons, entering the Service as Ensign or Lieutenant *and* Assistant Surgeon, and performing their double duties, combatant and medical, indiscriminately, or both at the same time, until promoted. When a man's turn came for promotion, either to Captain or to Surgeon, he was obliged to make his choice between the two branches, either taking the promotion which came to him, and permanently relinquishing the other branch, or once for all declining it, if he preferred to wait for promotion in the other branch

" Such a combination of duties seems strange to us in these times of greater specialisation, and would now be an impossibility. But a century ago things were different, and in many cases a man might have no great difficulty in carrying on both duties at the same time, or in changing from time to time from one to the other.

" The subject is one of great interest, and careful search has been made for information bearing upon it in all the original authorities available. It seems certain that no such combination of duties ever existed as a *general rule*. But undoubtedly some individuals did hold double rank, military and medical, simultaneously, for several years, until they made their final choice. This choice, in one case at least, was bitterly resented by the juniors of the favoured officer, who vainly protested that he had left the Medical Department years before, and had no claim to revert thereto "

The officer referred to was Francis Balfour, appointed in November, 1768,

and ranking as an Assistant Surgeon from 2nd July, 1769. Nine days later he received a commission as Ensign, becoming Lieutenant in 1770 and Surgeon in 1777, when he gave up his combatant rank. He became full Surgeon in October, 1786, and was the cause of a memorial being put up to the Council by three other officers who felt aggrieved at the advancement of one of their fellows, when they thought that he had left the Medical Service for good.

Balfour put in an extensive rejoinder to this, certain extracts from which are given as showing some interesting details of his life —

“ I must inform your Hon’ble Board that when I received a Commission in the Army I *never* did resign my appointment of Assistant Surgeon, my eagerness to acquire the Persian language, and my desire to give myself as much as possible to this study prevented me, it is true, from applying for several Months at this period for any medical charge, because I found that it would be too great an interruption to the object I had in view. But I never relinquished my Claim to the indulgence which the Service then afforded, of enjoying both appointments and of choosing and attaching myself to that line, which I should like best, when it should become necessary by arriving at a certain Rank to keep the other

“ In reply to the second Objection of the Remonstrance I must inform your Hon’ble Board, that, instead of doing duty only for a few months, previous to my promotion to the rank of Full Surgeon, I will pledge myself to prove that I did duty effectually and officially not less than *six years*, with Success and Reputation

“ In 1769, I acted as an Assistant Surgeon at the Presidency and in the Hospital, immediately after my arrival, and before I got a Subaltern’s Commission, about *six months*

“ In 1770, I acted as an Assistant Surgeon with the Troops at Giretty, under the command of Sir John Cummings, about *six months*

“ In 1771, I lost my health, was obliged to leave Bengal, and was not able to return to my duty for many months

“ In 1772, being still intent upon the study of the Persian language, I confined myself to the duty of an officer, and applied for no medical charge. During this interval, however, I was not altogether useless to the service in the line of Physic. For in the course of this year, I put into form the Medical Observations I had collected during the two unhealthy seasons in which I was employed at Calcutta and Gyretty. These observations describe a successful and I may say a certain method of curing the destructive Remittent Fever of Bengal by giving the Bark in the Fit as well as in the Remission of the Fever. This practice was *first* introduced by me immediately after my arrival, and I hope it will not be overlooked by your Hon’ble Board in forming an estimate of my services previous to my promotion to the Rank of Full Surgeon

“ In 1773, finding that the attainment of the Persian was now within my reach, I applied for, and obtained the charge of a detachment that was then proceeding to Cooche Behar, and I acted in that unhealthy country as an Assistant Surgeon about *14 months*

“ In 1774, after my return from Cooche Behar I acted for five months as an Assistant Surgeon at Chunarghur under the command of Colonel Muir, and had charge of the Hospital, whilst Mr Armstrong was sick

“ In search of the health which I had lost in Cooche Behar and which I did not recover for several years, I went to Madras, in December, 1774. I was there appointed Surgeon to the Nabob, and attended him for the space of three years, the Nabob himself applying at the expiration of every year to the Government of Bengal for permission to detain me in that Capacity. By this detail

your Hon'ble Board will perceive that previous to my promotion to the Rank of Full Surgeon, I was officially employed in the medical line not less than five years " 35

The final decision of Government was in Balfour's favour and he rose, in due course, to a seat on the Medical Board in 1798. He died at Fernie in Fife in May, 1818.

Crawford came to the conclusion that there is sufficient evidence that it was *customary* for men to serve as combatant and medical officers at the same time, until they reached the rank of Full Surgeon or Captain, at which time they had to decide in which branch they would continue to serve, but that it was not recognised as being the *normal* course of events, otherwise the other officers would not have made such a fuss about Balfour's reversion.

In the oldest list of the Bengal Service in existence, which is in manuscript and dated 30th May, 1774, the name of an Assistant Surgeon Andrew Cranston occurs with the remark "is an officer likewise". If this were the normal procedure there would be no need for the remark. The other Assistant Surgeons have no such remark against their names. The Andrew Cranston referred to entered as an Assistant Surgeon in October, 1769, was commissioned as an Ensign on 5th October of that year, became Lieutenant on 28th March, 1773, and died at Barhampur on 5th September, 1776.

One or two extracts are appended showing that this practice was not uncommon. Fort St. George Cons. of September, 1713 —

"Capt Richard Phrip representing to the Board that he was obliged to leave his Surgeon behind in England for debt, and that his Surgeons Mate is now upon his deathbed so that he is in great distress as being bound on a sickly voyage, and Ensign Heydon that come out on the *Hannover*, who was bred a Surgeon petitioning to quit the Service and go with Capt Phrip the Board agree thereto."

Hickey's Gazette of 27th October, 1781 —

"Death Gilbert Paisley Esq. Surgeon General on the Coast whose services at Madras had rendered him greatly respected having been resident there upwards of 25 years. He came out originally in the Artillery as a Lieut. Fireworker, but soon exchanged the Sword Spungeworm and Ramrod for the Lancett Gold Headed Cane and Snuffbox."

Another case was that of Andrew Williams who received a commission as Ensign in the 84th Foot on 4th September, 1761, was appointed as a Surgeon in Bengal on 27th November, 1762, and when the Medical Boards were instituted in 1786, was nominated to be a member.

The last case of this kind on record is that of Hugh Mackenzie, who joined the 57th Foot, the "Diehards" of Albuera, as an Ensign in February, 1813, becoming Lieutenant in February, 1814. He served with that regiment in the Peninsula, being present at the battles of Vittoria, Nive and Nivelles. At the conclusion of that war he retired on half pay, and studied medicine at Glasgow, taking the M.D. in 1823. In January, 1829, he joined the Bengal Medical Service as an Assistant Surgeon and died at Sandoway in Aikan in December, 1831.

The contrary practice by which medical officers have left the Medical Branch for combatant commissions has been of less frequent occurrence. An example of one such who probably gained advantage by the exchange was Lieutenant Henry Grace, who had been bred a Surgeon, but obtained a commission in the Gunners and rose in 1817 to the rank of Major-General in that Branch.

In the British Army the combination of duties appears to have been the rule rather than the exception when standing armies first came into existence after the Restoration. An article in the *R A M C Journal* for January, 1910, is quoted as saying —

“ At this time (1660–1688), and for nearly a century after, it was not unusual to find surgeons holding double commissions. The surgeon purchased a commission as an ensign, and drew, in addition to an ensign’s pay, 2s 6d a day for hospital duty. On promotion such officers usually gave up the surgical part of their duties ”

It is, however, in the United States that such occurrences have been most frequent. For example, General Leonard Wood, Chief of Staff of the U S Army in 1913, entered the Medical Department in 1884 from Harvard. The picturesque career of the Irishman Dr James McHenry is also of interest. He was born at Antrim in 1753, emigrated to America in 1771, and studied medicine at Philadelphia, becoming Surgeon to the Fifth Pennsylvania Battalion in August, 1776. He was taken prisoner at the surrender of Fort Washington in November, 1776, during the War of Independence, and exchanged in 1778, when he took up the appointment of Senior Surgeon of the Flying Hospital. After a short spell as Secretary to General Washington he was, in 1780, appointed as A D C to General Lafayette, and, in 1781, promoted Major. From 1783 to 1786, he was a member of Congress. In January, 1791, he became Secretary for War, and held that office until 1800. He died in 1816 at Baltimore.

There were two ways in which the Medical Services were recruited in the eighteenth century, apart from Surgeons sent out from England, by promotion from the ranks and by the appointment of foreigners, though neither of these procedures was common.

Putting aside the legendary butcher on board an Indiaman who was, according to Surgeon-General Beatson, appointed as a Surgeon about 1758, it appears that, usually, the men promoted had had some previous knowledge of medicine before they had enlisted.

“ One Walter Stewart a Phisitian coming out on the *Resolution* in the quality of a Souldier, and having had severall successfull practises in his profession here made it his Pitition to be free’d from the duty of a Souldier, that he might have more time to study and practise, which in consideration, that there is great occasion for him in Toun these sickly times, tis agreed that he be free’d from bearing Armes provided he pay the Charge &c^a the Right Honble Company have been att in sending him out ” 36

“ Read a letter from Col Campbell dated 17th Inst enclosing one from Mr Lucas Surgeon in Camp recommending in a very particular Manner Thomas Walker, who came out a Soldier in

the 7th — A Man well qualified to assist the Surgeon in the Hospital, being a careful, diligent, and sober Person, & having been regularly bred to that Profession, & therefore requesting that he may be discharged from the Battalion and be appointed Assistant Surgeon

"Agreed that Thoms. Waller be appointed to assist the Surgeon in the Hospital, & that he do receive at Pay 10s. p. Month in Lieu of Batta & all Allowances whatever, and that his Pay be a Salary do in a strictly exact manner" 37

Probably the most distinguished officer ever to be appointed from the ranks was Jacobus Mead, a Sergeant in the garrison at St. Helena, who, though unqualified, had acted as a Tutor to Surgeons for fifteen years before being appointed Assistant Surgeon on 13 September, 1807. He returned to England in 1808, qualified the same year and was reappointed Assistant Surgeon in 1811. Ten years later he had risen to be a Superintending Surgeon and head of the St. Helena Medical Service.

A considerable number of foreigners were taken into the Service locally during this century. Some of the cases referred to elsewhere in these pages, two attaining considerable eminence in their specialties — Nathaniel Wallich, the botanist, who was a Polish Jew, and Mox. Spenger, the distinguished Orientalist, who was a Swiss. There are a few little more than names. The majority were Frenchmen, some of whom had served the French King and Company, while others had been in the employment of other powers. It is curious to note that in a list of the Service in the Madras Military Consultation of 8th April, 1771, six Assistant Surgeons, of whom four are foreigners, are specially noted as "not to rise."

The Director, though not insisting on British nationality, required that their crests should, at any rate in the case of foreigners, be of the Protestant faith.

Medical Board, to whom your order were referred, reporting that Mr Pouget was a foreigner and a Roman Catholic, we declined admitting his pretension, but as he has served 12 years, and was at one time placed upon the list of Surgeons though irregularly appointed, we have allowed him the Privilege of that rank, and fixed him at Surgeon Hospital Mate" 38

Mr Joseph Pouget served the Company for thirty years, retiring in 1808. It is remarkable to note that he continued to draw his pension for twenty-five years.

In 1773 the Company appointed a Board in London to examine candidates for appointment as Assistant Surgeons, and, about the same time, in India, Boards were instituted for examining men locally appointed. One case is on record where the Board in Calcutta were compelled to criticise the recommendations of the Board in London. Mr Briars, who had recently arrived from London, was reported on by the Head Surgeon at Barhampur in April, 1792 —

"Reports that Assistant Surgeon Briars has been disordered in mind ever since his arrival. His prescriptions cannot be made up. He prescribed Glauber's salt in quantities of one to ten ounces for a dose. Mr Haly has had to treat all his patients. He continues to go about in the sun all day, very Ragged and very Dirty, in object of great compassion to every one who beholds him" 39

on which a Military letter from Bengal comments —

"Para 84. Mr Briars, Assistant Surgeon. Hospital Board observe this Gentleman must

have been sent out without having been duly examined as to his qualifications, or that the examination must have been superficial ”

One case is recorded by Crawford, of the appointment of a Surgeon who had no medical qualifications at all John Gilman, who had been apprenticed to a Surgeon and had attended classes at St Bartholomew's Hospital, came to India as a Cadet in the Bombay Infantry in 1781 He was, in 1782, appointed Assistant Surgeon by the order of the Commander-in-Chief, Sir Eyre Coote, and rose to be the second member of the Medical Board The qualifications of a few others appear to have been somewhat shaky, such as those of John Peter Wase who had come out as Surgeon in a Portuguese ship, the *Arabida* He had studied medicine in Edinburgh, but his only qualification was a licence from the Queen and Minister of Portugal

That the Company did not approve of local appointments is shown by a letter from the Court of Directors in March, 1784 —

“ Para 10 We disapprove the appointments made by you between the 1st January 1782 and 10th March 1783, of twenty-four Assistant Surgeons

“ And positively direct that on receipt of this letter you revoke the said appointments

“ Para 11 And in order to fill up the vacancies occasioned by the removal of the said twenty-four persons we do permit twenty-six Assistant Surgeons should so many offer to proceed to India this season on the usual conditions

“ Para 12 We do permit the twenty-four Assistant Surgeons appointed by you to remain in India to practise in their profession and direct that they be reappointed to vacancies as they may happen after the said twenty-six Assistant Surgeons shall have been provided for ”

The men in question had been appointed to fill vacancies caused by the First Maratha and the Second Mysore Wars In the end, in spite of the aggrieved attitude taken up by the Court, all the locally appointed Assistant Surgeons were confirmed in Service, as is shown by one of the more fulsome perorations of the Court —

“ The Board having maturely considered the very unfortunate predicament of these gentlemen, that many of them served the Hon'ble Company ably and faithfully when attached to the Bombay and Carnatic Detachments where they were subjected to the most trying and fatiguing services—that they all relinquished their former Views in Life for the purpose of entering into the Company's service, implicitly relying for Support and Subsistence on the rewards of their Abilities and Exertions—that their Reinstatement will be not only an Act of real Humanity and Justice, but also consistent with the Orders of the Court of Directors to provide for them as Vacancies shall occur, the Report from the Surgeon-General proving that the Establishment even after the Admission of those remaining in the Country will be less than it was when they were reduced ” 40

The Company, nevertheless, made every effort to get rid of their surplus officers, first by offering them leave home without pay, and, when that produced very little response, by offering leave for three years on half pay in Europe or on full pay in Bengal This was not so generous as it sounds for the officer surrendered his allowances which made up a large part of his income This also met with no great response Though rules had been extant for leave on medical certificate and on private affairs

since 1783, it was not until 1796 that the first definite Furlough Rules were published allowing for three years leave after ten years service in India

We have previously noted that the Company arranged, when possible, for one Surgeon at least to be on duty in their chief stations, though more were made available as time went on, and, in April, 1763, we find the establishment of Surgeons in Calcutta increased from two to four. The need for the appointment of special medical officers to accompany the Company's troops in the field did not occur until 1745 when war broke out between England and France. The state of war which continued during that latter half of the eighteenth century caused, as we have already noted, a considerable increase in the number of medical officers maintained by the Company.

We find, by the end of 1785, the following medical establishment, in all three Presidencies —

Each regiment of European Cavalry	1	Surgeon and 2	Mates		
Each battalion (five companies) of Artillery	1	„	„	1	Mate.
Each battalion of European Infantry	1	„	„	1	„
Each regiment of Native Cavalry	1	Asst -Surgeon and 1	black Doctor		
Each battalion of Native Infantry	1	„	„	1	„
Staff of General Hospitals, Bengal	7	Surgeons and 45	Asst Surgeons		
„ „ „ „ Madras	6	„	„	52	„
„ „ „ „ Bombay	3	„	„	14	„
Peace establishment of regiments,					
Bengal	9	„	„	35	„
Madras	7	„	„	41	„
Bombay	3	„	„	12	„

This meant that, at that date, the medical establishment of the whole Indian Army, on a peace footing, and exclusive of the Surgeons in civil employment, came to a total of 234. Those who are interested in such matters may study the fluctuations in the strength of the three Presidencies from time to time as set out in Crawford's book.

By 1824 we find that the Medical Department had increased to 630, distributed as follows —

	Bengal	Madras	Bombay
“ Surgeons	100	70	40
Asst Surgeons	200	140	80

including all Ranks, whether Members of the Medical Board, Superintending Surgeons of Divisions, Civil Station Surgeons or Assistants, as well as those who have given up promotion to permanent stations ”

By 1864 the authorised strength of the I M S had risen to 861. Bengal 425; Madras 243, Bombay 193, though these numbers were never actually attained.

In 1766, only two years after its formal constitution, the Medical Service was divided into a Civil and a Military side. The question as to whether the Medical

Service was primarily military or primarily civil is one that had been brought up for settlement from time to time, and the decision has always been that officers of the I M S are all primarily military officers, and that those in civil employment are only temporarily lent for civil duty, and, while on that duty, act as a reserve for the Army and are liable to recall at any time to military duty

After the split in 1766, the two branches were reunited in 1773 “ which will put them on a more equitable footing and prevent jealousies ”

“ The Board having duly considered the above representations (i e regarding allowances and rank on the military side of the service) and being sensible that the unequal distribution of the advantages would attend the profession of Surgeon in the different Departments of the service is a great discouragement to Such as are fixed in the Military Line, since being once appointed there the greatest application to the duties of their charge and the practice of their profession will not entitle them to be moved into the Civil Line to which the chief emoluments are annexed, and considering further that the license from the Hon’ble the Court of Directors does not fix them to any particular line of service, which seems to imply that they mean no distinction to be made in it

“ Agreed that the Civil and Military Surgeons of this settlement be incorporated into one establishment to take rank according to the following scheme, and rise from this time in regular promotion to the different employments specified, but as this rule, however salutary, in future, might prove a real hardship to some individuals in the Civil List who might thus find themselves thrown back to an inferior rank, it is agreed that the claims of individuals shall be considered in settling the particular list

“ One Surgeon-General
 One Surgeon of the Presidency
 Three Surgeons of the Presidency
 Surgeon-Majors
 Surgeons at Subordinates
 Surgeons to the Army
 Assistants of the Presidency
 Assistants in the Army ” 41

1786—FORMATION OF THE MEDICAL BOARDS

On the establishment of a regular service of doctors for the Company it was found necessary that there should also be devised some form of administration that should be in control of the service As steps in that direction, in 1769, Thomas Anderson was appointed as Military Surgeon-General in Bengal, and, in 1773, Daniel Campbell as Surgeon-General with authority over all members of the service both military and civil In 1783 Campbell proposed that he should remain as Civil Surgeon-General while a second Surgeon-General should be appointed for the Army This was not approved In Madras, Stephen Briggs became Military Surgeon-General in 1759, and in 1770 Gilbert Pasley was associated with him to form a Committee to administer the Medical Department Briggs was succeeded by James Anderson

and Pasley by Colley Lucas A similar informal Board was set up in Bombay formed by the four principal surgeons

In 1785 the Court of Directors in London, having delivered themselves of various fine sentiments such as "Conceiving the case of our sick or wounded soldiers to be an object dictated as well by sound policy as by humanity," set out regulations respecting the reform of Military Hospitals in India at some length These are quoted *in toto* in Crawford (42), but only para 2 needs to be abstracted here The regulations as a whole show a very enlightened view as to the division of responsibility and duties in such a manner as to be most advantageous to the medical care of the sick

Para 2 — "That the Governor and Council shall appoint a Hospital Board which is to consist of the Director, Chief Surgeon, and Surgeon of the Hospital established at Head Quarters, for the Purpose of Directing the necessary Regulations and Arrangements for all the Hospitals of the Presidency "

The Boards so constituted in the three Presidencies were at first known as Hospital Boards, and only given the title of Medical Boards in 1796

THE CALCUTTA MEDICAL BOARD The first appointments to the Board were as follows — James Ellis, who was at the time Surgeon-General became Physician-General, Andrew Williams, the next senior, took his place as Chief Surgeon, and John Fleming as Surgeon to the hospital at Headquarters This Board held its first meeting on 29th May, 1786 It is noteworthy that salaries were becoming more generous, the three members of the Board receiving respectively £2,500, £2,000 and £1,500 per annum The Head Surgeons of all other Hospitals received £1,000 per annum The Physician-General was also Director of Hospitals

The Members of the Board were not at first whole-time administrative officers, but were all primarily Presidency Surgeons, charged with attendance on all sick officers, civil or military, on duty or on leave The third member of the Board, in addition to these duties, was in charge of the Presidency General Hospital—in all a whole-time job for any man

In 1796 the Board was reduced to two, the Head Surgeon of the Hospital losing his place In 1805, the number was again raised to three, the members at that time being—Mr J Fleming, first member, Mr. F Balfour, second member, and Mr W R Munro, third member

THE MADRAS MEDICAL BOARD was established on 14th April, 1786, one month before the Board in Calcutta, with members as under —

James Anderson	Physician General
Colley Lucas	Chief Surgeon
Thomas Davies	Head Surgeon of the Hospital.

The constant shufflings and changes that occurred on all these Boards are duly set out in Crawford's book They are of little interest for our present purpose. Two General Orders which issued in Madras in 1794 are worthy of note as laying down the duties of members of the Medical Board and of Superintending Surgeons

“ G O 29th Jan 1794 As the Regulations for the Medical Department, published in the Orders of Government of the 4th ultimo, do not define with sufficient accuracy, the Duties to be exercised by Head Surgeons, the Honourable the President in Council is pleased to declare, that it is the particular province of the Head Surgeon to visit every Hospital in the District, European and Native, as often as may be practicable, to have free access upon all occasions, to the sick whether in Hospital or Barracks, and to give such directions regarding them as he may find expedient, to see that the Clothing, Bedding, &c be complete and sufficient for the number of sick, and that the Diet be good and wholesome, and conformable to the Diet Tables laid down, that due cleanliness be preserved in the Hospital, and that proper Medical attendance be provided, at the end of each visit, the Head Surgeon is to report to the Hospital Board, the state of every Hospital, particularizing for the information of Government such matters, requiring redress, as may occur ”

“ G O 19th March 1794 As the regulations for the Medical Department, established during the Government of Sir Archibald Campbell, do not accurately define the specific duties required of the Senior Members of the Hospital Board, in regard to a personal superintendence of the different Hospitals on the Coast, the Honourable the President in Council has been pleased to resolve, that the Physician General, and Chief Surgeon, shall alternately visit the Hospital at the Presidency once a week, and that the Chief Surgeon shall once in every year, at such time as may be approved by the Hospital Board, proceed to each of the other General Hospitals on the Coast, and make enquiry into every matter relating to them and to the conduct of the respective Surgeons, taking especial care, that the President in Council be made acquainted through the Hospital Board, with all circumstances necessary for his information ”

When the numbers on the Board were reduced to two in 1796, William Raine, who was then third member, lost his seat but regained it shortly afterwards on the death of Colley Lucas Terence Gahagan was appointed to the third seat, in 1799, but that this appointment was not a happy one is shown in a Military Letter from Fort St. George of 14th April, 1800

“ Mr Gahagan’s return from England, and appointment as Head Surgeon of the Presidency General Hospital, and his intention to take into his own hands the management of the Hospital

“ Charge of the General Hospital at the Presidency Animadvert on the conduct of the Medical Board in submitting, upon the arrival of Mr Gahagan with the Court’s appointment thereto, that Gentleman’s proposed intention to undertake the interior Management of the Hospital, according to the orders of 1786, thereby recommending the revival of a system noted for its flagrant abuses, and the abolition of the very Regulations suggested by themselves for their correction Remark that unless the Medical Board shall observe a Conduct more consistent with its own principles and the general integrity of the Service, they shall not confine their animadversion to mere disapproval ”

Actually what the Board did was to remove him from their service, and Raine and Gahagan sailed together in the *Asia* Raine died on the way home, but Gahagan, who seems to have had considerable influence, obtained in London a reversal of the decision of the Madras Government, was back in India before the end of 1801, and sitting again on the Medical Board on 15th October of that year He later had many disagreements with Anderson

“ Appointment of Mr Goldie to be Medical Storekeeper in preference to either Messrs Horlman or Ainslie, which created such dissensions at the Medical Board (and which daily occur) as to render them a subject of ridicule to the whole Settlement ” 43

In due course the turn of the wheel of fate brought both Goldie and Gahagan to the top of their service. Goldie became a member of the Board on 15th May, 1819, and, on the death of Anderson, Gahagan became President of the Medical Board, the title of Physician-General being revived for his benefit. He retired in 1812 after nearly forty-five years' service, and was specially recommended by the Madras Government for an increase of the usual pension.

THE BOMBAY MEDICAL BOARD. This Board was constituted about a year later than the other two. On 16th August, 1787, a Board of two members was appointed with Andrew Durham as Physician-General and Director on a salary of only £1,500 per annum, and Richard Harrison as second member and Hospital Surgeon on £800. It is not clear why this reduction of numbers and salary was made in the case of Bombay, as the same Regulations governed all three boards and the instructions were quite clear. The first action of the newly appointed Board was to make an emphatic and well-grounded protest against the invidious treatment meted out to them. In the long letter which they addressed to the Council one paragraph is of interest —

“ We beg leave further to remark to your Honour &c that we humbly conceive the particular situation of this Presidency was not sufficiently attended to when these regulations were framed, or two Surgeons would not have been deemed adequate to afford due attendance to the numbers generally sick belonging to this Garrison, which we believe much exceed those at Fort St. George, and in general even equal those at Calcutta, in both of which places the Hospital Board is to consist of three members. The number sick in the three Hospitals by the reports of this morning amounted to 325 of which 221 were Europeans. The Hospitals being situated at some distance from each other and two of them without the gates, render it scarcely in the power of two Surgeons to give them due attendance consistently with the other parts of their duty, the attending on the Hon'ble Company's Servants and their families when sick, and indeed this has hitherto been the opinion of the Hon'ble Company themselves, who have until now allowed four Principal Surgeons of the Hospital of this Garrison ” 44

The request for equality of treatment was disallowed at the time but, by 1789, justice appears to have been done and Bombay to have taken its place alongside the other two Presidencies. Mr. Francis Toomey then became the third member.

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An obligation was laid upon all these Boards to inspect the General Hospitals under their administration but Crawford was unable to find evidence that this duty was ever observed in any more than a perfunctory manner during the whole period of their existence.

It was decided, in 1818, that the tenure of office of members of the Boards should be for four years only, though this order was not enforced for some years. The provisions were laid down in a Bengal Order of August, 1824, as coming into force from 1st May of that year. The members, on being relieved of their duties on the Board, were to be permitted to return to Europe on pension, or to resume their duties as Surgeons on the Establishment.

We learn also from the same order that —

“ The following Scale of Rank and Precedence is assigned to the Medical Officers

The Members of the Medical Board as Lieutenant Colonels
 Superintending Surgeons as Majors
 Surgeons as Captains
 Assistant Surgeons as Lieutenants

“ The Rank so granted, is to be considered as purely official or by Courtesy, and is not to give any Claim either to Military Command or to Increased Allowances of any kind, except in cases of distribution of Prize Money, in which the Officers of the Medical Establishment will be allowed to share according to the scale of rank now established ”

In 1829 the tour of office was extended to five years, and it was defined that a member, vacating in this way, must retire and might not revert to his previous grade in the service

By 1842 increased pensions to the members of the Boards had been granted and new titles conferred upon them. The senior member again became Physician-General, the second Surgeon-General, and the third Inspector-General of Hospitals. From that date onwards, as vacancies occurred, a member stepped up into the vacant place, and a Superintending Surgeon took the vacant post of Inspector-General of Hospitals. The equivalent Army rank for members of the Board was now taken to be that of Brigadier-General. Furthermore, all Surgeons of thirty years' service were designated as Senior Surgeons with the relative rank of Major.

Promotions to the Board were practically always by seniority although, in theory, they were supposed to be by selection, and several instances are quoted by Crawford of officers who protested against what they considered to be the injustice of their seniority having been overlooked. A letter from the Court, of October, 1824, lays it down that, though promotion to the grade of Superintending Surgeon shall be by seniority, that to the Board shall be by selection, but little attention was paid to this directive. On the one occasion when it was acted on, the promotion made was cancelled by orders from the Court.

The Boards in India were finally abolished in 1858.

BOARDS IN ENGLAND In 1773 a Professional Board was appointed in London for the purpose of examining candidates for the Company's Medical Service. The first Examining Surgeon whose name is recorded was George Marten, of Limehouse, who died in 1793, having held the office for many years. He was succeeded by Drs Lorimer and Hunter, who also examined medical indents from India. Dr Lorimer died soon after his appointment, but Dr John Hunter, who was contemporary with, but not the same as, Dr John Hunter the Anatomist, was a man of some consequence. He had served with the Army Medical Department in Jamaica in 1781-83, and on his retirement settled in London. He was elected F R S in 1787 and F R C P in 1793 and later Physician Extraordinary to the Prince of Wales. He died in 1809, and was succeeded by William Dick who was a retired officer of the I M S, having put in the greater part of his service as Superintendent and actual owner of the Calcutta Lunatic Asylum, from which he retired in 1802.

In 1815 William Frederick Chambers was appointed to assist William Dick, and eventually succeed him as Examining Physician in 1818, holding that office until 1833, when he resigned to devote himself to his considerable practice as the leading Consulting Physician in London. He was Physician-in-Ordinary to both King William IV and to Queen Victoria and also to her mother, the Duchess of Kent. This distinguished man, though born in India in 1786, was never a member of the Company's Indian Service. He died in 1855.

On the resignation of Chambers, the office of Examining Physician was taken over by another retired officer of the A M D, John Robert Hume, who held it until 1845. Dr Hume had served through the Peninsular War and thereafter taken up practice in London. In addition to the M D of St Andrews, he was awarded the D C L of Oxford and the F R C.P of London. He was personal Physician to the Duke of Wellington. Dr. Hume was succeeded, in 1845, by John Scott who had in his youth made three voyages in the Company's service, before settling in practice at Barnes in 1824. He held office until his death from angina in 1859.

Shortly before the death of Dr Scott the Crown had (1858) assumed the Government of India, with the result that the officer appointed to succeed Scott, Sir James Ranald Martin, was appointed as Physician to the Secretary of State for India in Council, and the Medical Boards established by the Company automatically came to an end.

1788—THE GRANT OF COMMISSIONS

In 1788 a long minute was prepared on the Medical Services by the Governor-General, Lord Cornwallis, as a result of which Medical Officers of the Company became, for the first time, Commissioned Officers. Before that date they had been Warrant Officers serving on warrants. The Minute, and the new rules for the Services, were both published on 11th November, 1788. Those rules were designed to level up the conditions of service. In the words of the note appended by the Governor-General —

"I have had frequent occasion to Remark the preference given by the Medical Gentlemen to Situations in the Civil Line, and at the Subordinate Factories, because they are in general stations of more Ease and of greater Emolument. I am far from thinking that such a Service should be deprived of a due proportion of Stations of this description, but it should, at the same time, be our care to confer them with discretion, and to make them the rewards of those who have submitted to the more laborious duties of their Profession. If, instead of benefitting by the improvement in Practice, which an attendance on Hospitals and Corps is best calculated to afford, a first introduction into the Service is accompanied with the attainment of one of those preferable Stations, we shall look in vain, I apprehend, for the future fruits of experience and knowledge, which the disorders of this climate require, and if, on the other hand, these situations are allowed to be retained, for a long Series of Years, until a Progressive Rise in the Service encourages the Gentlemen holding

them to look up to the more important and beneficial stations of the profession, there can be but little probability of seeing them creditably filled. It is chiefly with a view to obviate these inconveniences, to dispense more equally and impartially the advantages of the Service, and to hold up encouragement to Professional Merit and Practical Experience, that the Rules and Regulations which I now lay before the Board have been framed. I shall point out how they severally apply to these and to other objects I have had in view, and shall be happy if their future operation tends to produce the many good effects which I am anxious should result from them."

It is interesting to note that the Presidency Surgeons, as well as the Surgeon of the Calcutta General Hospital, were regarded as being in military employment. An innovation was contained in the 15th of these rules —

"15th The Governor General in Council, deeming the practice and regular Attendance upon General Hospitals to be the best Schools for initiating and instructing the Junior Medical Servants, is pleased to direct, with a view of qualifying them for the performance of their Duty in every Rank and Station to which they may afterwards succeed in the Medical Line

"1stly That every Assistant Surgeon, upon his first admission into the Service, shall be appointed to a General Hospital, where he shall be obliged to bestow all his Time and Attention to the Practice of the Hospital, for at least three months, merely as a Pupil under the immediate Eye and Direction of the Head Surgeon

"2ndly That any pupil who has recommended himself properly to the Head Surgeon by his Attention to the Hospital Practice for three months, shall be considered as sufficiently qualified for the Duty of an Hospital Mate

"3rdly That every Hospital Mate, who shall have discharged his Duty in that capacity for 18 months shall be considered as eligible to proceed to any other medical charge his rank may entitle him to hold, but that the Order of his future Progression shall be from the Duty of an Hospital Mate to that of a Regimental Assistant, and from the duty of a Regimental Assistant to that of a Sepoy Battalion, or Civil Station, and that no Assistant Surgeon shall be competent to an appointment to a Subordinate Civil Station who has not served the Period prescribed in a General Hospital, and become thereby entitled to proceed to a Situation which is generally considered of more ease and emolument than the Duties of the Military Department" 45

The 12th rule set down that all "Assistant Surgeons employed at the Subordinate Civil Stations, upon being entitled to Promotion to the Rank of Full Surgeon, shall either give up their claim to further Preferment, or quit such station and assume the Duties of the Rank to which they are promoted, and of the station to which they may be appointed, either in the Civil or Military Line, in order that there may, hereafter, be no excess in the Rank of Full Surgeons, after the number has once been reduced to the Establishment fixed by the General Regulations"

In January, 1796, the Court of Directors again ordered the separation of the Service into two branches, and called upon all medical officers to make their choice. The order was very unpopular but, as a result of it, forty-five officers in Civil employ elected to return to Military, and double that number preferred to give up all claims to promotion in order to retain their civil appointments

The minute conveying this order has another interest in that it laid down the first Pension Rules for the Service.

" That a Member of a Medical Board who shall have been in that station not less than five years, and not less than twenty years in India, including three years for one Furlough, be permitted to retire from the service, and allowed five hundred pounds per annum. That a Surgeon of a General Hospital, who shall have been in that station not less than five years, and whose period of service shall not have been less than twenty years, including three years for one Furlough, as above, be permitted to retire from the service, and allowed three hundred pounds per annum for life

" That all other Surgeons and Assistant Surgeons attached to the Military be permitted to retire from the Service on the pay of their rank after having served in India not less than twenty years including three years for one furlough " 46

Prior to that date pensions had been compassionate and granted only as a favour

" Mr Potter, an old Surgeon, permitted to retire on full Pay & recommended for an allowance of £100 per annum "

The Medical Board in Calcutta put in to the Court of Directors a memorandum containing such cogent arguments that the Court agreed to a suspension of the order referred to above. The chief criticism advanced was the depletion of the war reserve that would result, as the Civil Surgeons once having been separated would be no more subject to recall than other civilians. In a minute of Council dated 26th November, 1798, this decision was set forth —

" *Let it be the Court, 26th June 1798, para 79* And having taken into consideration the 11th, 12th, and 13th paragraphs of your Military letter of the 8th December, 1796, we hereby confirm your resolutions forwarded on the recommendation of the Hospital Board, that the whole Medical Corps shall continue to rise in one general list, subject as heretofore to all Civil and Military duties under the existing regulations, and that the Surgeons attached to Civil Stations shall be considered & equally liable with those serving in the Army to be recalled on Military Service, also that they shall on this footing be admitted to the indulgence of furlough and retiring

" *Para 80* The exclusion, however, from these indulgences of those who under the option of the regulation of the 24th October, 1788, had previously resigned all claim to future promotion, is strictly proper "

It is interesting to note that the Bombay Council were unable to persuade any of their medical officers to accept service in Civil. For nearly a century after the foundation of the service in 1763, civil employment was almost entirely confined to Assistant Surgeons. From 1788, the date of the Cornwallis minute, and onwards, the rule was enforced that an Assistant Surgeon wishing to remain permanently in Civil must resign all claims to promotion to the rank of Surgeon, as well as to furlough and pension. There were, indeed, a few appointments in Civil which might be held by officers of the rank of Surgeon, but these were filled by Surgeons from the Army, and not by the Assistant Surgeons who had given up promotion, and who remained permanently at the stations which they held while still in their original rank.

Among the stations which were tempting enough to invite Assistant Surgeons

to surrender promotion, the following were prominent Lucknow, Patna, Benares, Dakka, Murshidabad, Muzafarpur, Bhagalpur and Saran. The Assistant Surgeons at Lucknow, Patna, Dakka and Benares did not hold the Civil or Residency Surgeoncies but were assistants to the senior officers holding those posts. Nevertheless, there appears to have been enough financial attraction for the junior as well as for the senior, though it is probable that in the majority of cases it was not so much medical practice as contracts, sale of land, trade and indigo planting, etc., which were the draw.

We have noted elsewhere the stories of some of these men, but the all-time record for continuous service without leave was probably held by Francis Pemble Strong who came to India in September, 1815. He was appointed in 1822 as Civil Assistant Surgeon to the twenty-four Parganas, a lucrative appointment in those days, which included also an allowance for the medical care of the Royal Family of Mysore Princes. He refused promotion in order to retain that office, and thereafter held it for thirty-five years without taking furlough. He returned to England in 1857 and died a year later.

We have noticed that, prior to the orders under which commissions were granted in 1788, medical officers were not considered to be officers at all. In the Bombay Consultation of 6th January, 1704, it is noted that Robert Bartlett, the newly appointed Chief Surgeon, is "to take place next the youngest Lieut" while Minutes of the Bengal Council in 1785 include the whole personnel of the Medical Department as Warrant Officers, with the possible exception of the Surgeon-General. In those cases in which Assistant Surgeons were given commissions as Ensigns it is clearly stated that they were appointed to be Officers, thereby showing that an Assistant Surgeon was not at that time considered to be an officer.

When the Bengal Service was constituted, in 1763, there were three ranks Head Surgeon, Surgeons and Surgeon's Mates, and the last named were again divided into Hospital Mates and Regimental Mates. The term Hospital Mate was usually synonymous with Assistant Surgeon. In the rank of Head Surgeon were, at first, only the two Senior Surgeons in the Province.

The ranks of Surgeon-Major and Surgeon-General were purely military and were normally surrendered when the troops returned to cantonments. The Surgeon-General was the P M O of the Army, while a Surgeon-Major, as Senior Medical Officer of a Brigade, had the rank and pay of a Major of Infantry. Both ranks were abolished with the establishment of the Medical Boards in 1786.

A table of fees payable by candidates for Commissions is given in the Bengal Minutes of Council of 22nd September, 1785, and shows the fee for a Surgeon-Major to have been £100, for a Surgeon £70 and for an Assistant Surgeon £30. Promotion, during the first century of the I M S, from Assistant Surgeon to Surgeon, went by vacancies and not by length of service. Some might be fortunate and get the rise in four years, while some took as long as twenty, the average being twelve to fifteen years.

A GENERAL REVIEW OF THE CONDITION OF THE SERVICE IN THE EIGHTEENTH CENTURY

During this century the status of the profession had greatly improved. We see the Surgeon in process of transition from the barber-surgeon of the late Middle Ages to the Surgeon as we know him to-day. But the day of antiseptics and anæsthetics was not yet. Medicine was still empirical and surgery crude and barbarous. Cheselden of London (1688-1752) had, by his brilliance and rapidity in operating, drawn the attention even of the King of France, who sent over to England his personal attendant to study the methods by which these outstanding successes were achieved. It was Cheselden, the friend of Addison and Pope, who first made the Surgeon into a gentleman, although it was John Hunter, also in that century, who really raised the profession of surgery to equal that of medicine, by making of it a science as well as a craft.

We shall see some far-off repercussions of those happenings in our sketches of the more weighty and respectable of the doctors of the Company, but against those pictures of rectitude must be set the curious case of Surgeon-Major Francis Balladon Thomas, who held the important post of Residency Surgeon at Lucknow in 1785. This post was the most lucrative in the gift of the Company and Thomas held in addition, at the time of his trial, the highest medical military appointment, namely that of Surgeon-Major to the First Brigade. Hough's "Courts-Martial" quotes the case at length. The following extract speaks for itself —

“ Minutes of Council, 26th January, 1785 ”

“ Case 4 — Proceedings of a General Court-martial held in Fort William, from the 15th December, 1784, to the 15th January, 1785

“ Crime — Mr Francis Balladon Thomas, Surgeon-Major to the First Brigade, and late Surgeon to the Residency of Lucknow, ordered into arrest by the Commander-in-Chief for the following charges exhibited against him by Mr J. Bristow, late Resident at Lucknow

“ I accuse Mr F. B. Thomas, Surgeon-Major to the First Brigade, and late Surgeon to the Residency of Lucknow, of conduct and behaviour unbecoming of a Gentleman in having demanded from me payment of a Bill for Medicines and personal attendance whilst I was Resident at Lucknow, in doing which he has acted unlike a Gentleman in the following particulars

“ 1st — For demanding from me payment for the said Bill, notwithstanding his having been at the same time, in receipt of allowances from the Company as Surgeon to the Residency

“ 2nd — Supposing Mr Thomas to have had a right to make some charge, he has behaved unlike a Gentleman in demanding exorbitantly in one or more instances in the Bill

“ 3rd — He has acted unlike a Gentleman in drawing up or detailing the said Bill in false, scandalous, and indecent terms, in several particulars, with an apparent design and tendency to injure my character, and destroy the peace of my family

“ 4th — Supposing his charge had been reasonable, and had been occasioned by the causes alleged in his Bill, he has departed from the conduct of a Gentleman in divulging and publishing

those causes in breach of confidence, and in violation of the sense of honour and fidelity, held sacred among Gentlemen of his profession'

“(A true copy) (Sd) P Murray, Adjutant-General
(Sd) J Bristow ”

“ *Finding* Article 1st —The proof of demanding payment of the Bill is before the Court, and although they are of opinion that act does not subject Mr Thomas to the charge of conduct and behaviour unbecoming the character of a Gentleman, yet they think it highly reprehensible in a Surgeon in the H C 's service to make any charge for Medical attendance or medicine to a Company's servant

“ Article 2nd —The Court is of opinion the charges are very exorbitant, but as there is no established rule for charge in the Medical Profession in this country, they acquit Mr Thomas of gentlemanlike behaviour in this particular

“ Article 3rd —The Court is of opinion the Bill is drawn up and detailed in language most scandalous, and highly indecent, and upon this part of the charge, they do find the Prisoner Mr F B Thomas to be guilty of conduct and behaviour unbecoming the character of a Gentleman

“ The charge of *false* with respect to Mr Bristow's disorder, does not appear to the Court to be established, but, in the case of the Bramin, said in the Bill to have been wounded by his people, it appears to them that this man was wounded by Scpoys without the knowledge or participation of Mr Bristow

“ Article 4th —The Court acquit Mr F B Thomas of this part of the charge

“ *Sentence* —The Court having found Mr F B Thomas guilty of conduct and behaviour unbecoming the character of a Gentleman, in breach of the 2nd Article of the 15th Section of the Articles of War, do sentence him to be *Discharged the Company's Service*, and is hereby discharged accordingly —(Signed) W Duff, Lt -Col , President ”

As Crawford remarks, it would be interesting to know what were the scandalous and highly indecent terms used by Dr Thomas in drawing up his bill

Dennis Kincaid, whose sinister views on the Company's surgeons we have already recorded, is very naughty also regarding those adorning the century now under discussion

“ The doctors advised heavy draughts of port in the hot weather as a specific against fever. One doctor recommended plenty of meat to strengthen the blood, but it was appropriate that he suddenly 'fell dead after eating a hearty dinner of beef' In fact the doctors must have been responsible for as many deaths as in the previous century. Their charges were enormous, a gold mohur for a visit, and their one panacea was bleeding, little children were cupped till they fainted from loss of blood. After the bleeding a ferocious purge was administered, a source of a little extra profit for the physicians who charged a rupee for an ounce of salts and three rupees for an ounce of bark ”

It is only fair to remark that these views and methods of treatment were those in general use at that time and not peculiar to the surgeons in the service of John Company

We have already noted that hospitals were erected in Bombay and Madras in the latter part of the seventeenth century. In February, 1715, we find a record of

the first matron having arrived in Bombay from England and that, almost at once, she married the Company's Master Carpenter

“ Cons 20 Feb 1715 Mrs Pack, who was sent out from England on the *Queen* as Matron of the Hospital, and who has lately married Mr Hatch, allowed a salary of £30 per annum, and to have convenient rooms near the hospital ”

Mrs Pack appears to have continued her work at the hospital after her marriage

A new hospital was erected in 1733 near the Marine Yard in Bombay, while in 1755 orders were passed “ that a room for chirurgical operations should be built ” In 1771 medical science had become relatively so advanced that, in drawing up new regulations for the hospital, directions were given for the erection of a “ Chymical Elaboratory ” In 1769 an old hospital, formerly used for men of the Royal Navy on Old Woman's Island, was rebuilt at a cost of Rs 9,234 In 1781 a Consultation refers to the plans for the new hospital prepared by the Principal Engineer at a proposed cost of Rs 5,15,025, with the remark that the scheme must be postponed as being too expensive That this was not unreasonable on the part of the Company is shown by the fact that this estimate was twice the cost of the Calcutta Medical College Hospital erected in the middle of the nineteenth century and nearly as large as the cost of the present St George's Hospital in Bombay built at the end of that century Crawford suggests the reason for the extravagant estimate to be that the new hospital was required to be shell-proof, in case of a siege

Forbes in his “ Oriental Memoirs ” says that, when he left Bombay in 1784, there then existed three large hospitals, one within the gates for Europeans, another on the Esplanade for sepoys, and a third for convalescents on Old Woman's Island. The first of these was the General Hospital of that time, the others were opened in 1769

In Madras, as we have seen, three hospitals were in existence before 1700, and Captain Alexander Hamilton in his “ New Account of the East Indies ” published in 1727, mentions, regarding Madras, that there was “ a very good hospital in the town ” Nevertheless, in 1711, subscriptions were being collected towards a new hospital for the English Inhabitants, and, in the course of the next few decades, hospitals sprang up everywhere In 1711, the Council of Fort St David applied for permission to build a hospital Elisha Ellill, a gunner in the Fort, seems to have obliged by selling them his house for four hundred pagodas but, by 1728, that hospital was declared ruinous and was rebuilt In 1737 a hospital was constructed at Fort Marlborough in Sumatra, which was a settlement then subordinate to Madras, and another, in 1747, at Kadalur

When war was entered into with France in 1744-45, a special hospital was opened for the Royal Navy

“ Cons , 4th Feb 1744/45 The Paymaster acquaints the Board that, pursuant to order of last Consultation, he has been with the Surgeons to survey the granary on the island, which they find may be made fit for the reception of the men-of-war's sick people, by opening a few windows

for the benefit of air, and some other small alteration, which he computes will not cost above 200 pagodas Ordered that he set about them forthwith ”

The hospital so constructed was in use up to 1790, after which date the sailors were accommodated in the garrison hospital until a new Naval Hospital was built in 1808

In 1726 the Madras Government complained that the running of their main hospital was becoming too expensive for them With considerable cunning they thought they had found a solution

“ Ordered, that whereas it has been for some time the custom for one of the Surgeons to have the immediate care of the Hospital solely, they do in future act each six months by turns, that by them acting thus interchangeably, we may make the experiment whether the one cannot reduce the charge of the hospital lower than the other, which it is believed out of emulation to recommend themselves, they may do ”

Madras surrendered to the French in September, 1746, but was restored to the British in August, 1749 By 1750 we find the hospital overcrowded and in bad repair The condition of the sick is graphically described in a Cons of 25th November, 1754

“ Messrs Robert Orme and Alexander Wynch report that they had visited the Hospital, and found that, by the defects of the Buildings, the Sick are greatly exposed, and had suffered much from the late Inclemency of the Weather That they complained of Cold, which can only be prevented by adding to the present Allowance of Bedding That the Steward complain'd he could not restrain the Sick from taking their Victuals out of the Kitchen without waiting till it was regularly delivered to them That the necessary directions had been given to remove all these Inconveniencys except the want of Bedding and the defects of the Buildings, to which they are of opinion some advantageous Additions may be made at a moderate Expence ”

It is sometimes difficult to know which hospital is being talked of in records concerning “ the hospital ” Love, in his “ Vestiges of Old Madras,” says of this matter —

“ A medallion on the wall of the present General Hospital, facing the road, bears the inscription, ‘ Hospital founded 1753 ’ The legend is misleading It cannot apply to the Madras Hospital irrespective of situation, because the institution in the Fort was established nearly a century earlier Nor can it serve for the present building or site, because the hospital of 1753 had its position on what is now the north-west Esplanade Another structure, nearer the present site, was in use in 1758, but after the siege the institution was transferred to Muthialpetta, where it remained for several years ” 47

In 1757 the Surgeons Turing and Wilson submitted a request for enlargement of the hospital —

“ In the first place, we are humbly of opinion that the Hospital should be made capable of Lodging two hundred or Two hundred and fifty Men, and that there should be Salivating Rooms fitted up for Thirty at least, not more than five or ten in a Room Likewise that a Place be fitted up for the reception of two or three hundred Seamen against the Arrival of the Fleet

“ Secondly, that the Floors of the several Wards should be raised a Foot at least above the Level of the Court Yard .

“ Fourthly, that there be a room fitted up for Operations, with Tables and Chairs for that purpose, and a Chest to keep Instruments and Bandages in ready prepared

“ Fifthly, that there be a room fitted up for a Shop, with Shelves and a Shopboard —Robert Turing James Wilson ” 48

The hospital was pulled down the same year, and transferred to some house near the site of the present General Hospital. In 1758 Madras was again besieged by the French and the hospital was, of necessity, moved into the Fort. By February, 1759, it was again moved, this time to a site occupied by the Capuchin and Armenian Churches where it remained for thirteen years, when the site was found unhealthy and plans were put out for a new hospital “ calculated indeed with good Conveniences and Accommodations for 600 Men and about 20 officers the whole to be terraced and built in Chunam ”. By October, 1772, this new hospital was complete. It consisted of two blocks, probably the most westerly of the present buildings. From this hospital the present Madras General Hospital is lineally descended.

In Calcutta the building of hospitals did not begin until the eighteenth century, the first hospital being opened early in 1708.

“ Having abundance of our Soldiers & Seamen yearly Sick, and this year more particularly our Soldiers, & the Doctr representing to us, that for want of an Hospitall or Convenient Lodging for them is mostly the occasion of their Sickness, and such a place will be highly necessary as well for the Garrison and Sloops as Company's Charter party Shipping to keep the men in health, tis therefore agreed that a convenient spot of ground near the ffort be pitcht upon to build an Hospitall on, & that the Casheirs pay out of ye Compa Cash for the said occasion, towards perfecting it, the summe of two thousand Currt Rupees & what more may be gathered in by Subscriptions from the Commandrs of the Europe and Country Shipping & and Inhabitants wch is to be forwarded & gathered in by Mr Abraham Addams who is to look after the building the same under the direction of the Councill ” 49

About this hospital the remarks of Captain Alexander Hamilton, in 1708, are pointed —

“ The Company has a pretty good hospital at Calcutta, where many go in to undergo the Penance of Physic, but few come out to give an Account of its Operation ” 50

This hospital does not appear to have been a large one. “ The Hon'ble United Company will supply the Hospitall with 30 cots . . . To provide 6 Brass Potts, 6 Saucepans, 12 Porringers, 1 Congee of Pewter Plates with twenty Spoons ”. The hospital was continually falling into disrepair and was finally destroyed at the capture of Calcutta in June, 1756. A temporary structure was put up in 1757 which lasted until 1769. The hospital situation in Calcutta is sensed in the following extracts —

“ The Surveyor sends in a Letter representing that the Hospital and Salt Petre Godown are in great want of repair and that unless they are repair'd he imagines they must fall this year

“ Finding great Inconveniency for Want of Room in our Hospital and from not having the Benefit of a free and open air ” 51

In 1766 the old hospital was reported on by the Company's architect as being

so much in want of repair as to be dangerous, and, in March of that year, the Company resolved to sell it, which they did for Rs 414 ! Meanwhile a new hospital had been under consideration since 1766 In 1768 the Rev. Mr Kiernander's Garden House was purchased for this purpose for Rs 98,900, as the Company's architect reported that it would be suitable for a Hospital Mr. Kiernander contracted to build two large new wings by the 13th June, 1770 This was the third hospital provided by the Company in Calcutta, all of which were erected primarily to serve their soldiers and sailors, but which also admitted Europeans of all classes This third hospital was in use up to 1908, when it was replaced by the present Presidency General Hospital

In 1792 the Calcutta Native Hospital was opened It was at that hospital that the famous Superintendents, Shoolbred, Nicolson and Martin worked It was rebuilt in 1874 as the present Mayo Hospital

The rates of pay of the service did not rise to any extent during the eighteenth century Throughout this period one finds surgeons enrolled at a pay of £36 per annum A list of the servants of the Company in Bengal, in January, 1714, for example, shows —

“ Surgeon Richard Harvey arrived in India	1 Jan	1712			
			pay	£36	
„ Oliver Coult	„ „ „	7 Sept	1713		
			pay	£36	
„ William Hamilton	„ „ „	27 Dec	1711		
gone with ye			pay	£36 ”	
present					

while on 24th April, 1770, the pay of the Surgeons at Calcutta, having risen in 1769 to £40, had fallen again to £35 A Surgeon's Mate was lucky if he received £27 a year A letter from the Court of Directors to Madras, dated 13th March, 1761, which is quoted by Love in “ Vestiges of Old Madras,” is of interest —

“ You tell us that the Salaries of our Surgeons be enlarged if we expect or desire to have Men of Ability in their profession The Surgeons that we send abroad to our Capital Settlements are always acquainted with their Salaries and Emoluments, and we find no difficulties in having Able Men of that Profession, as well as all other Branches of our Service If their heads there are turned, give us due Notice, that we may call them home again and supply their Places with Men of more humble minds, though perhaps not inferior Talents This answer may serve you for all others who are dissatisfied with their Employes and Employers If the Surgeons labour under any particular grievances or disadvantages which their predecessors did not experience, you ought to have said so and explained them ” 52

Pay in Bombay was, at first, considerably higher than in the other Presidencies, the Senior Surgeon in one case (in 1707) receiving as much as £90 per annum By 1729, Surgeon's pay had been reduced again by the Governor to what seems to have been considered as the current market value of a Surgeon—i.e. £36 a year By 1770, things had improved a bit, and we find Thomas Anderson, as Surgeon-

General to the Army, receiving £365 a year, while the ordinary Surgeon might earn as much as £150, plus £35 diet, making a total of £195 a year.

We have already seen that, with the establishment of the Medical Boards in 1786, there was a considerable upgrading of pay all round. Prior to the Regulations which formed the Boards and fixed the scales of pay, there appear to have been no real fixed rates and, beyond the basic valuation of £36 a year, a Surgeon might get what he could or what luck brought to him.

There were three sources from which he might supplement his income. He might firstly, obtain one of the few really lucrative appointments, such as that of Residency Surgeon at Lucknow which, in 1785, with allowances paid by the Vizir of Oudh, brought in Rs. 8,000 a month. This was, however, later on scaled down by Government to Rs. 5,000 and finally to Rs. 684.

Another source of income, casual, but none the less welcome, was prize money. In 1781 the Mysore prize money amounted to Rs. 22,478 for each Captain's share and Rs. 11,239 for that of each subaltern, and Surgeons shared as Captains, while Assistant Surgeons equated with subalterns.

The third method of increasing income was a frank and unashamed indulgence in trade, frequently in opposition to the Company itself. Crawford sums the position up well —

"In the literature of the eighteenth century the Anglo-Indian 'Nabob' is a proverbial feature for wealth and extravagance. The traditional Nabob, celebrated for the amount of money he had made and the prodigality with which he spent it, was usually a member of the Civil Service, less frequently a military officer, a merchant, or a planter. Most of the merchantile houses, and great part of the planting industry in India, indeed, were founded by servants of the Company. The picture drawn by the novelist of the time may have been, indeed were, exaggerated, but had a solid substratum of truth. But, whatever the nature of his duties in India, civil, military, or medical, the man who made a fortune in the East did so, not out of his pay and allowances, but by trade and speculation. Such pursuits were perfectly legitimate. The Company's servants were paid such poor salaries that they were allowed, even expected, to add to their incomes by private trade. It is true that the Court of Directors in London often fulminated against their servants' private trade. But it was only when such private trade was pushed to such an extent as to interfere seriously with the profits of the Company's own commerce, as it did in Bengal in 1760-65, or to embarrass the Government, as it did in causing the War of 1763, that such objections were pressed. Roughly speaking up to a period well after the middle of the eighteenth century, trade of all kinds was followed by the Company's servants, of every service and of every grade. And such speculation in a modified form — in contracts, in silk, in indigo, in zamindari, and in banking, was continued until nearly the middle of the nineteenth century. During this period many medical officers, among others, piled up large fortunes. But such fortunes were made, not from professional earnings, still less from official pay, but from contracts and trade. To a much later date, we may say up to the present day, individuals have added considerably to their incomes by judicious or fortunate investments in the limited liability companies by which nowadays most Indian industries, such as tea, cotton, and jute, are carried on." 53

The Surgeons of the Company do not seem to have lagged behind their fellows in the energy which they devoted to the accumulation of fortunes. Even as early as

1737 a Bengal letter speaks of one Robert Broadfoot retiring with a considerable fortune, and we have seen that William Fullerton received, in 1757, £30,000 in compensation for his losses in the sacking of Calcutta

In 1765 private trade was abolished under the orders of Clive, and the Company's higher servants formed an Association, the Inland Trades Association. This association was exclusive and composed of Field Officers, Chaplains and Head Surgeons. It was abolished in 1767 and in its place a commission on the Provincial Revenues was allowed. In a share-out which took place in July, 1770, each Senior Surgeon received Rs 2,250

A curious feature of this period was the issuing of Hospital Contracts to the Senior Surgeons of the Hospitals. The profits from these contracts seem to have been very great and to have caused a certain uneasiness in the minds of the authorities.

"We express our apprehensions that the Surgeons of the Army will find their account in encouraging the men to plead sickness in order to be received into the Hospital, and that we must therefore depend upon the vigilance of those officers who visit the sick to prevent this evil" 54

Matters were even worse in the case of contracts issued to Regimental Surgeons

"In Lord Lake's camp such were the enormous receipts in consequence of these contracts for supplying corps with medicines, diet, and dhooles, that Doctors Monroe and Cockrane especially realised the largest fortunes ever made in this country" 55

These Hospital contracts were abolished in Bengal in 1815 and in Madras in 1827. Bombay were more fortunate than the other Presidencies. In 1777 a contract for the Hospital was given to the two Senior Surgeons, and two years later the Standing Committee reported, in consequence, a saving of more than Rs 60,000 yearly. Bombay abolished such contracts in 1828

A few instances may be given of individual speculations on the part of Medical Officers. We have noted previously Archibald Keir and his interests in mining at Ramgarh in which, however, he was not too successful. He was glad in 1786 to surrender his lease "provided the Company will reimburse him the actual expense he has been at in Working the Mines, otherwise he expects to divide his property therein into Shares and carry on the work by a Society of Merchants"—an early example of the proposed flotation of a joint stock company in India

The following two extracts speak for themselves —

"The contract for the repairs of the Lushkerpore, Bettoreah, and Bhoorna Pools (embankments) during the current year, advertised in our Gazette of the 1st January last, is to be made with Mr Todd, the Surgeon at Bauleah, his proposals having proved the lowest of several which were tendered"

"With respect to Mr Hunter, represents him as a Man, who has been more engaged in pecuniary transactions, than in the pursuit of any Professional knowledge. Shall however, recommend to the Board to appoint Mr Hunter to the office of Chief Surgeon, when it shall become vacant" 56

Two instances of large fortunes left by surgeons in the Bengal Medical Service are quoted from the *Gentleman's Magazine*. Dr. Gray left £30,000 to the town of

Elgin Alexander Gray entered the service in 1783 and served five years in the Navy, becoming Surgeon in 1799. He died in 1807. Dr Thomas Philips, who also served in the Navy, became Surgeon in 1794, joined the Medical Board in 1815, and returned in 1817. He died in 1851 at the age of 91 years. He left large endowments for education in Wales and in addition some £19,000.

An early instance of an Indian Medical Officer engaged in these pursuits is found in the life of Assistant Surgeon B. C. Chaudhuri, of the Bengal Civil Sub-Medical Department, who died in August, 1907, at the age of 97, leaving behind him a fortune of 20 lakhs (at the then equivalent value of over £130,000). Though the foundation of this fortune was made in medical practice its bulk came from judicious investments in lands and country produce.

John Fullerton, who entered the Bengal Medical Service in 1802, resigned in 1812 and entered the banking house of Alexander & Co. of Calcutta. He left India with a large fortune in 1823. His contemporary, Joseph Hume, who came out in 1797, to become an Assistant Surgeon in Bengal in 1799, resigned in 1808 with a fortune of £40,000 and sat in Parliament as an advanced Radical. He was elected F.R.S. in 1818, and was twice Lord Rector of Marischal College, Aberdeen. He made a blank verse translation of Dante's "Inferno."

George Nicholas Cheek served in the Peninsular Wars and at Waterloo. He entered the Bengal Medical Service in 1816 and served in the third Maratha War. After that war he settled in civil employment in Bengal where he indulged on a large scale in indigo planting and trade in country produce. He gave up promotion to retain his civil appointment, and, presumably, his business. We have referred elsewhere to David Turnbull who carried on an extensive trade in country produce and in indigo while Civil Surgeon at Mirzapur from 1790 onwards, and mentioned that he there discovered the use of lac dye. Like Cheek he refused promotion and actually resigned his rank in order to remain at Mirzapur, where he died in 1822. It was such men as these who prompted Chevers to remark in his article on "Surgeons in India—Past and Present" (1854) —

"The *Philosophic Surgeon*, who on his way to his indigo factory, would enquire of the native doctor—'Any thing to-day'—and, upon receiving the ready answer, 'All's well, Lord of the world, only five men dead,' would exclaim cheerfully—'good, very good'—and canter gaily about his business" (57),

and caused Sir Ranald Martin (Inspector-General) in 1838 to complain of "the commercial habits acquired at a civil station" and of the "professional idleness" which rendered men who had been for a long time in civil employment useless for any professional work.

By an order of 1st January, 1824, officers of the Army in Bengal were forbidden to enter into commercial speculations. This was made a general order in 1826, but not made applicable to officers in civil employment until 1841.

"*Judicial and Revenue Department, Aug 17th 1841* With the sanction of the Supreme

Government, the Right Hon The Governor of Bengal notifies for general information, that the Hon the Court of Directors have been pleased to prohibit for the future in every case the connection of civil surgeons with business as bankers, traders, and indigo planters, and to direct that, in the cases in which it has been permitted, no extension of such employment be allowed The contravention of this order, the Hon Court further observe, must be considered as *ipso facto* a resignation of their service ”

As many officers did not obey this order it was repeated in 1851 to ensure its being enforced and, in 1862, the Government of India forbade Medical Officers in civil employ to hold lands for agricultural purposes in the district in which they are employed Eleven years later “ district ” was extended into “ province ”

Various other orders have forbidden officers of any service to have any connection with the public Press or to act as Secretaries to Public Societies All the above orders have been frequently republished as reminders, but it should be noted that none of the orders issued by Government in this connection have cancelled the right of Medical Officers to accept fees in return for professional services

Apart from those taking service of a purely military character we find a certain number of Surgeons of the Company employed in non-professional appointments

William March, who was appointed Assistant Surgeon at Bombay in 1766, and later posted to Sind, was one of the early travellers of the Service, having visited Kandahar in 1771-72 Unfortunately, he left no record of his experiences The other traveller of this century of whom we have records was Alexander Hamilton, who went with Bogle to the forbidden city of Lhasa, in 1774, being thus one of the first Englishmen to visit Tibet He went on two other expeditions to Bhutan in 1776 and 1777 Of other travellers mention is made of Robert Saunders who, in 1783-84, journeyed to Tibet but never reached it, and Adam Frere, who travelled with Colonel Kirkpatrick's Mission to Nepal in 1792-93

Among the early Scientists in the Service we find John Gerhard Koenig, who came to India in the Danish Service as Surgeon and Naturalist at Tranquebar and was appointed Naturalist to the Madras Government in 1778 Apparently he was considered as a Military Officer, so it seems probable that he was regularly enrolled in the Service

William Roxburgh, after serving as Surgeon's Mate, was appointed Assistant Surgeon at Madras in 1776 and Surgeon in 1780 In 1789 he was appointed Naturalist at Madras and, in 1793, Superintendent of the Calcutta Botanical Gardens, which had been founded by Colonel Kyd in that year. He went home in 1813 where, after his death, was published his chief work, the famous “ Flora Indica,” with additions by Wallich

Nathaniel Wallich was a Jew whose name was, it is said, Nathan Wolff Taking a degree in Medicine in Denmark he came out to India as a Surgeon in the Danish Service in 1807, was made prisoner by the British at Serampur in 1808 and employed to assist Roxburgh at Calcutta, eventually becoming Superintendent of the Gardens in 1816, a post which he held for thirty years

Zoology during this century is only represented by Patrick Russell who, after serving as Physician to the Turkish Company's Factory at Aleppo from 1753-71 was appointed Botanist and Naturalist at Madras in succession to Koenig in 1785. He held the post for only three years and died in London in 1805. His chief works were "An Account of Indian Serpents" in four volumes, and "A Treatise on Plague" in two volumes.

James Anderson, whom we met as the first Surgeon-General of the Madras Board in 1786, introduced cochineal into India and played a large part also in the introduction of silk, sugar cane, coffee and American cotton. He wrote numerous papers on those subjects and on the minerals of Coromandal. The use of lac dye was discovered by another Surgeon, David Turnbull, when acting as Surgeon at Mirzapur in 1806.

In purely literary pursuits, reference must be made again to Surgeon John Holwell, who appears to have been the first of the Company's servants to take any interest in the languages and religions of India. This interest was later developed during this century by five other of the Company's Surgeons. Francis Balfour took up the study of Persian and Urdu and published one or two translations. James Ross translated the "Gulistan of Saadi". Henry Harris, in 1790, after only seven years service, produced a Hindustani Dictionary.

The most voluminous writer on philology of this period was John Borthwick Gilchrist. He produced over twenty works, of which the most important was his "Hindustani Dictionary and Grammar" in 1787-96. He was placed on Special Duty while engaged on these books.

John Drumond compiled a Grammar of the Marathi and Gujarati languages in 1799.

Crawford draws attention to the interesting fact that Oliver Goldsmith, who was a medical graduate of Trinity College, Dublin, and took the degree of M.D. at Oxford in 1769, was promised a post as Surgeon to a factory on the Coromandal Coast where he was to receive £100 a year (instead of the usual £36 for a Surgeon). He was also told that he could expect £1,000 a year from practice, which must have been a gross overstatement. He was examined in December, 1758, as to fitness by the Corporation of Surgeons of London and rejected.

The first member of the Service to distinguish himself in after-life in England was Bussick Harwood, who was Assistant Surgeon in Bengal in 1774 and afterwards posted as Surgeon to look after the Nawab of Oudh. He served for only four years and apparently amassed quite a large sum of money from his practice at the Court of Oudh. On his return to England, he took the M.B. at Cambridge in 1785 with a thesis on blood transfusion, in which he had experimented extensively, and with success. He was, the same year, appointed Professor of Anatomy at Cambridge, took his M.D. in 1790 and, in 1800, became Downing Professor of Medicine which office he held in addition to his Chair of Surgery. He was knighted in 1806. He died in 1811.

this kind conferred on any member of the Service; and that was thirty years he had left it ' Even then it was certainly not given on account of his service in India, but for his work as Professor at Cambridge

From the middle of the eighteenth century the Company was almost continually at war. France and England were at war in Europe, and India took its share in the struggle from 1745 to 1748, while, under the pretext of supporting various Nairs and Rajahs the struggle was continued for about another fifteen years, till in the end the British were victorious

The operations meant that the Company had to maintain armed forces continually in their service. The defence of Arcot in 1751, of Trichinopoly in 1752, and the victory of Clive at Kavaripak in 1752 were successive stages of the fight against the French. Four Mysore wars and two Maratha campaigns gave plenty of opportunity for the Company's troops to exercise the arts of war

" In every war, and in every frontier expedition, in which the Indian Army has taken part, from Hunza and Nagar on the north-west border of Kashmir, to Ceylon, from China to Arabia, members of the I M S, as an integral part of the Indian Army, have played their part, also in Africa, from Egypt to the Cape of Good Hope

" But members of the I M S have also served in many wars in which the Indian army has had no share. The service has been represented in these wars, in a few cases by officers officially deputed, in a few by officers who had left the service, in many by young men, recently qualified, who entered the I M S later on

" Four men, who afterwards joined the I M S, served in the Peninsula, and three at Waterloo, about twenty-five in the Crimea. In short, in every war of importance in which the British Army was engaged, during the nineteenth century, except in the final advance on Omdurman, past, present, or future members of the I M S have served, also in the American Civil war, the Franco-German war, and the Russo-Turkish war " 58

It is an unfortunate fact that the war services of medical officers in the eighteenth century are not recorded, possibly, as Crawford suggests, because medical officers, as a rule, were not of sufficient importance. The names of a few of the Surgeons serving in the Karnatik between 1750 and 1760 have survived with some of their exploits

James Wilson served in the defence of Arcot in 1751 and in Trichinopoly in 1752, and his accounts of both sieges are still extant. Other officers serving in this war were Joseph Hinchley, Archibald Keir, Archibald Swinton and Tyso Saul Hancock, the last named having treated Clive's wounds at Samiavaram

The names and some account of the officers who served in Fort William at the time of the siege have already been given in these pages, as also those who were present at Patna in the war of 1763

Charles Wasmus, a German Surgeon, who came to India as Surgeon's Mate in a Dutch Indiaman, was later appointed Surgeon in the British Army and served at Kasimbazar and Patna in 1769 and various other places. He wrote a small book entitled " Memoirs of a gentleman who resided several years in the East Indies during the late Revolutions "

at this time that the Court of Directors, eight years later, insisted on his promotion to the Medical Board Carmichael also, in July, 1783, successfully treated Daulat Bhaui, *Qiladar* of Chitaldrug, who offered to give him a house outside the prison Carmichael preferred to remain with the other captives, but seems to have been well treated Though he died there in confinement a few months later, there seems to be no suspicion that his death was due to other than natural causes " 60

A remarkable case was that of Assistant Surgeon John Burette, who was taken prisoner during this war at Jinji, where he was serving in September, 1781 He did good service to the other prisoners and was reported on by a Hospital Board as being a capable Assistant Surgeon He was not, however, recommended for promotion, but it was advised that he should be appointed to a regiment of Sipahis The observations of the Council on his case were as follows —

" Mr Burette can have no further service from this Government, and it is the height of effrontery in him to expect arrears of Pay as a Prisoner, when it is well ascertained that he immediately entered the service of the enemy after his being captured and had continued with Tipoo till the hour of his desertion from him To give countenance to such acts of treachery to the Flag of the Company would be Hanging out extraordinary emoluments to those who could be the most abandoned in their principles " 61

As Crawford remarks, a charge such as the above, of desertion and treachery, would seem to be somewhat difficult to live down, but Burette succeeded in doing so Though he was not reinstated, he was granted a pension, which was later increased, was allowed to live in Bengal and was, in fact, appointed in 1806 as the first Police Surgeon to be employed in Calcutta and died there in 1811

In April, 1782, the Council addressed the following letter to Captain Johnston, their Officer Commanding at Negapatam —

" Sir—Inclosed we send you a list of Physicians, Surgeons, and Apothecaries, now supposed to be prisoners at Negapatam

" We desire that you will release them and give them permission to proceed whither they please without molestation

" And for your further direction we are to inform you, that according to the usage in Europe which we mean to follow here, No Medical Person in the service of the Hospital ascertained to be such are to be considered or detained as Prisoners

" We have the honour to be—Macartney (&c Council) " 62

In spite of this order there occurred many instances of medical officers, both French and English, being detained as prisoners for long periods In the case of Surgeon Nicol Mein, who was captured by the French in June, 1782, his captors did indeed treat him as not being a prisoner of war, but at the same time, and on the same grounds, refused him any subsistence allowance, though he was detained at Kadilur for over two months

The *third Mysore War* lasted from 1790–92 In this war John Laird served as Surgeon-General to the Grand Army under Lord Cornwallis, Colley Lucas as Surgeon-General of the Madras troops, and Alexander Clugstone as Surgeon-General of the Bombay column. The first two were present at the siege of Seringapatam in

February, 1792 The casualties of the Service during this war were, three medical officers killed Assistant Surgeon Henry Morris, Assistant Surgeon Sutherland and Surgeon A Home, the last-named being put to death at Nundidrug Fort in January, 1792

The *fourth Mysore War* was fought in 1799 and ended with the storming of Seringapatam Tipoo Sultan fell in this engagement and the Moslem dynasty of Mysore came to an end. No I M S officer lost his life in this war

In reading this short account of the War Services of the I M S during this century the fact must not be lost sight of that during the long wars with France every man who went home or returned to India, whether soldier or civilian, merchant or planter, was on what amounted to active service throughout the voyage and might, at any time, be called upon to fight for his life The Company's ships carried large crews and were well armed but, even so, they were not a match for a battleship There were cases, however, in which Indiamen beat off assailants who were superior in strength In 1757 three Indiamen, the *Houghton*, Captain Walpole, the *Suffolk*, Captain Wilson, and the *Godolphin*, Captain Hutchinson, fought two French men-of-war, of sixty-four and thirty-six guns, off the Cape and defeated them with heavy loss The Company made a grant of £2,000 to each ship's company when they reached England

The most celebrated case was that of Commodore Dance, who commanded the China fleet of the Company, when homeward bound from Canton in 1804 with sixteen Indiamen and eleven country ships The value of this fleet was estimated at some eight million pounds sterling Off Pulo Aor, in the Malay Sea, on 14th February they encountered a French Squadron composed of one line-of-battle ship, three frigates, and a brig which had been waiting for them Dance hoisted signals to attack at once The attack was led by the *Royal George*, Captain Timmins, followed by the *Ganges*, Captain Moffat, and Dance's ship, the *Earl of Camden* The French, surprised at the daring of the attack, and mistaking the two Indiamen for British line-of-battle ships, retreated and were pursued by the Indiamen for two hours The English losses were one killed and one wounded, both on the *Royal George*

The Court of Directors on this occasion distributed rewards totalling £50,000 To Commodore Dance was awarded 2,000 guineas, a piece of plate and a pension of £500 a year. To Captain Timmins they gave 1,000 guineas and to each of the Captains of the other ships 500 guineas and a piece of plate Each Surgeon received 80 guineas and each Surgeon's Mate 50 guineas The Patriotic Fund presented Dance and Timmins with Swords of honour. The King offered Dance a baronetcy, which he declined He was knighted on 21st August, 1804.

Instances such as the above were, however, very exceptional, for the Indiaman as a rule was no match for a frigate or even for a strong privateer

“ Though the French navy, as an active force, was practically annihilated at Trafalgar in Oct , 1805, for five years longer French men-of-war and privateers found a safe base in the harbour of Port Louis, the chief town of Mauritius, where they could refit when damaged in action, and replenish

their exhausted stores In no part of the world did French sailors meet with more success than in Eastern seas, where they carried their depredations to the very mouth of the Hughli In 1810 the Governor General, Lord Minto, sent an expedition from India which conquered the French islands, and, with the seizure of their harbour of refuge, the interference of the French ships with the Company's commerce came to an end " 63

The only court-martial in the history of the Service which resulted in the accused being hanged occurred during these wars A French Assistant Surgeon named La Forge was executed for treason on 28th December, 1757 at Trichinopoly The following account is from Orme's " History of Indostan," while the proceedings of the Court are given at some length in Crawford's " History "

" The new year opened in the Carnatic with as little activity as the last had closed The French troops remained in Pondicherry, waiting the arrival of their expected armaments from Europe, during which, Mr Soupire, as he says in a memoir he has published, entered into a negotiation with two Jemautdars of the English Sepoys to surprize Trichinopoly, by means of the French prisoners Four hundred were in confinement in the city, and 50 or 60 had at various times been received into the English service, and in the end of D cember, soon after Calliaud returned from Madras, two of the enlisted Frenchmen accused one De la Forge, who had been accepted as a Surgeon's mate, that he had tampered with them to concur in a project, by which the foreigners in the service of the garrison were to murder the English guards in the night, then open the prisons, arm the prisoners, and with their assistance, overpower the rest of the troops Four other Frenchmen avowed the same conversation with De la Forge, who, with much obstinacy denied that he had ever spoken one word to any of them he was, however, hanged two days after his trial This might have been the first opening of Mr Soupire's scheme, although he says nothing of it, but nothing was discovered of his conspiracy with the sepoy's which he seems to have protracted until the end of April " 64

It is very doubtful if La Forge was ever actually employed as a Medical Officer of the Company If we consider that he was so employed, then, says Crawford —

" each of the three great public medical services has had one of its members hanged Edward Silliam Pritchard, the notorious Glasgow poisoner, had served in the Navy He was born in 1825, took the diploma of M R C S in 1846, and entered the Navy as Assistant Surgeon in the same year, but resigned in 1847 After trying practice in several other places, he settled in Glasgow in 1860 In Feb , 1865, he poisoned his wife and mother-in-law with antimony, was tried, condemned, and was executed at Glasgow on 28th July, 1865, this being the last public execution in that town And in Dec , 1887, a retired Surgeon Major of the A M D was sentenced to death at Cork for poisoning his wife with arsenic, and subsequently executed " 65

FLOWERING

NINETEENTH CENTURY

The First Half of the Nineteenth Century.

1857—The Mutiny.

The Sea Service of the Company.

1858—The Crown takes over the Government of India

The period 1865 to 1896

1896—The Amalgamation of the Three Medical Establishments into one Indian Medical Service

THE FIRST HALF OF THE NINETEENTH CENTURY

The nineteenth century is conveniently divided by the years 1857 and 1858 into two parts. The year 1857 marked the occurrence of the Mutiny, and 1858 the taking over by the Crown of the Government of India, and the abolition of the East India Company.

The period before the Mutiny was one of consolidation and extension of power at India. A Crown for India.

On the 1st October, 1857, part of the Madras and Bombay Presidencies, the Upper Duab, the Punjab, Mysore and Oudh 'became red'. Some of the territories, such as the States, Mysore, Gwalior and Indore, passed from the condition of dangerous neighbours to that of protected states.

The Charter of the Company, which had been renewed in 1793 for a period of twenty years, was after considerable opposition, again renewed in 1813. This Charter did not, however, continue the monopoly of Indian Trade previously held by the Company, and that trade was thereafter thrown open to all His Majesty's subjects. When the Charter again came for renewal in 1833, the China Trade also was thrown open, with the result that though their trading activities had practically ceased to exist, the Company still continued to hold the reins of Government. At the next renewal in 1853 the period was not fixed at twenty years as previously, but left for an indefinite period. Actually after only five more years the rule of the Company came to an end.

As regards the Medical Service, we have watched during the last century its growth, stability and importance. These were greatly increased during the ensuing century, which marked the period of flowering and maximum prosperity of the Service. The relative tranquillity of this period in India encouraged the development of the art and sciences. We have noticed that the French privateers which, after the defeat of the French Navy at Trafalgar in 1805, had lasted on in the Eastern seas, were finally crushed in 1810.

Indian troops for the first time left Asia in 1801 when an expedition under Sir David Baird embarked for Egypt, but arrived too late to take part in the fighting. Ten Assistant Surgeons accompanied this expedition, but the Senior Medical Officers all appear to have come from the A.M.D. Five I.M.S. officers, G. N. Cheek, H. MacKenzie, W. Twining, W. Tasken, J. Lawder served during the Peninsular War, and two of these—W. Twining and G. N. Cheek—took part also in the Waterloo campaign. In the Crimean War some thirty-one members of the Service were engaged. The last I.M.S. survivors of the Crimean War were R. Bonstead, who died in October, 1916, and B. Williamson, who died in February, 1917.

Crawford has collected the names of those I M S officers who served in British Wars in which the Indian Army took no part —

Flanders, 1799—G Babington
 Walcheren, 1809—J W Martin
 Kafir war of 1850—J P Bowling, as a volunteer
 Miori war—F Broughton
 Ashanti war—J O'Neil and A Adams, both as Surgeons in the Navy
 Zulu war—G M J Giles and J T C Ross

Also a list of those officers who served in foreign wars in which the British Army was not engaged —

Carlist war, 1835-38—J K Walter
 Italian war, 1848—J Fayrer, operations at Palermo and attack on Rome
 American Civil war—A L Mackay, after having left the Service, and H I Jones, before entering it Mackay served as Senior Medical Officer of the Artillery in the Army of Tennessee, and was present at the battles of Chickamauga, Atlanta, Jones-borough, Franklin, Nashville, Spanish Fort, and the siege of Menville Jones also served in the Confederate forces
 Franco-German war—G C Hall and C J F MacDowall
 Russo-Turkish war—D F Dymott and C Monks
 Balkan war of 1912-13—Major C Hudson (with the Bulgarian Army in Thrace), A N Dickson and F R Thornton

During the South African War, in the latter half of the nineteenth century, five officers of the Bengal Medical Service took part W H W Elliott, G H Frost, W R Edwards, who acted as Surgeon to the Commander-in-Chief, Lord Roberts, S J Thomson and J C Robertson A sixth Bengal officer, H Cayley, was Superintendent of the Scottish Hospital Two Bombay officers also served—J S Wilkins and A F W King—as well as C H B Adams-Wylie of the General Service I M S who died at Bloemfontin in June, 1900 At least ten men, who afterwards entered the Service, served in that war, as civil surgeons or as combatants.

“ In his autobiography Sir James McGrigor claims to have obtained for medical officers, for the first time, the honour of mention in despatches After the siege of Badajoz, taken by storm on the night of 6th April, 1812, McGrigor requested Wellington to mention the good work done by the Medical Department in his despatch announcing the capture of the fortress Wellington asked him whether such mention was usual, and McGrigor admitted that it was not, but urged that the Medical Department had deserved mention for their services, and that the fact that they had not been mentioned in despatches before was no reason why they should not receive such honourable mention now On consideration, Wellington agreed, and accordingly in his despatch makes mention of the good services of ‘ Mr McGrigor and the medical gentlemen under his direction ’, (Despatch of 8th April, 1812, *London Gazette*, 24th April, 1812) They are mentioned again in the same terms after the battle of Salamanca (Despatch of 21st July, 1812, *London Gazette*, 16th Aug., 1812) 67

In India itself there was no great trouble with wars during this century, but the third Maratha War, 1816-19, brought special mentions in the *Gazette* —

“ Towards the close of the evening, the Detachment was placed in a most trying situation,

PLATE V



"THE REMNANTS OF AN ARMY."

[Facing p. 101]

It was a noble deed, nobly and gallantly carried out, and when it had been achieved, the brave fighter returned to the tender care of the wounded, and to alleviate the pains of the dying ”

During the early part of the nineteenth century, the trial of officers by court-martial was of relatively frequent occurrence. The most common charges were drunkenness, duelling, insubordination, absence without leave, etc., many of which would, at the present time, be dealt with departmentally by senior officers. One of the most curious cases recorded was that of Assistant Surgeon J E Umphelby of the Bengal Service who was court-martialled at Fort William on 2nd October, 1852 —

“ *Charge* —For conduct disgraceful to the character of an Officer and a Gentleman, in having, at Calcutta, on July 7th, 1852, subjected himself to the indignity of being publicly kicked by Mr A P Pennefather, a clerk in the office of the Administrator-General, without adopting any sufficient measures, either immediately or for three days, to obtain reparation for such insult

“ *Finding* —Not guilty and honourably acquitted

“ *Approved and confirmed* —(Signed) W M Gomm, General, Commander-in-Chief, East Indies

“ Simla October 18th, 1852

“ The Commander-in-Chief is glad that he is able fully to approve and confirm the honourable acquittal of Asst -Surgeon Umphelby of the disgraceful imputation brought against him, and His Excellency trusts that the painful position in which this officer has been placed will be a lesson to him to be more careful in future in the choice of his associates, and more guarded in his language and behaviour ”

Crawford, in summing up his review of the Courts-Martial records of the Service, states that no case appears to be on record in which any member of the I M S has been brought to trial before a Court-Martial for cowardice, and that only one case of heinous civil crime committed by an officer of the I M S appears in the records. That refers to a Madras Surgeon of over twenty years' service who was sentenced, in 1821, to transportation for fourteen years for forgery. In 1840 an Assistant Apothecary, also of the Madras Service, was sentenced to death for the murder of another Warrant Officer of the same rank. The Commander-in-Chief, on account of extenuating circumstances, commuted this to penal servitude for life. Crawford, with the conscious rectitude of a member of the Bengal Service, points out that it is curious that these last two cases, as well as Blackwell's treason, Brown's case of poisoning, Martin's trial for murder and the execution of La Forge, which have been noted earlier in these pages as well as S Stokes and G Dauberny both tried for, but acquitted of, murder all occurred among members of the Madras Service. It is interesting to note that though six I M S officers fatally wounded other men in duels, no member of the Service allowed himself to be killed in an affair of honour. In such of these cases as came to trial the officers were acquitted.

It is fortunate that in forming a picture of this half century we have available three autobiographical works by officers of the I M S. All three of these are anonymous. The first in point of time was “ The Autobiography of an Indian Army

FLOWERING

Surgeon, or Leaves turned down from a Journal," published in 1854 is dull, but has a certain interest in that it gives a picture of service hundred years ago. The author studied at Edinburgh under a retired who had served at the capture of Seringapatam. He joined the Bengal 1820, paying £110 for his passage out, but getting half of it back for a Surgeon during the voyage. He served in the Burmese and the Punjab not in the Afghan War, and retired shortly before the Mutiny. He trial by Court-Martial and his voyage to China in an opium-smuggler but naively states that these episodes were taken from the career of another. He pays a tribute to the Service as "the most liberal public service" and generous service."

The "Diary of an Assistant Surgeon," which appeared in the *Asiat.* from 1841 to 1843 is the most interesting of these works. It never appeared in form and the author cannot be identified. He joined the Madras Service and served at St. Thomas Mount, was for a short time Civil Surgeon of Chinsaw service with various Native Indian Regiments. From Madras he went on sick leave on the *Lord Amherst*, paying £150 for a cabin to himself. He resumed Service on the expiration of his furlough. He appears to have been satisfied with the conditions under which he served and gives interesting details of an annual monthly domestic budget, in which the following expenses were considered the essentials: Servants Rs. 59, House-rent Rs. 17, Mess Bill Rs. 65, and necessities Rs. 30, making a total of Rs. 171. He stated that, out of his pay of Rs. as an Assistant Surgeon he should be able, if he remained unmarried, to save Rs. a year. The details of servants' wages were as follows (in rupees)—Munshi Headboy 8, Dressing Boy 5, Horsekeeper 7, Grasscut 5, Washerman 7, Ironman Waterman 3, Chokra 2. No sweeper is included in this list, and what "ironman"?

The author considered that Assistant Surgeons are more exposed to risks than other officers and considers their mortality rate to be roughly 3 per cent. He preferred Madras to the up-country stations, and gives some fair stories of shooting and duelling. He even saw the first cousin to the Rope Trick—a native conjuror sitting in the air some feet off the ground, as far as he could see without any support. He gave an account of two cholera epidemics he had been through and described the Mutiny which occurred at Vellore in 1806.

The third of these books was entitled "Stray Leaves from the Diary of an Indian Officer," published in 1865. Though the author called himself Mr. Carlisle his real name, according to Crawford, was Robert Bakewell Cumberland. He joined the I.M.S. as an Assistant Surgeon in Bengal in April, 1828, became Surgeon in 1845 and retired in 1854. Unlike the other two authors, he spent nearly all his service in Civil employment. His descriptions of Puri, where he acted as Civil Surgeon in 1836, and his visit to Sambalpur form the most interesting parts of the book. In 1846 he went on sick leave to Australia, where he married. On his return

to duty he was posted to the charge of an Infantry Regiment at Dakka. This regiment suffered from fever to such an extent that, on one occasion, out of 900 men only one man was fit for duty, and the regiment, on being ordered in 1848 to the Punjab in the Army in Reserve, was found to be too sickly to proceed. The regiment in question is stated by Crawford to have been the 62nd N I., he also adds that it mutinied in 1858 at Multan. Cumberland, on his retirement, went to Australia and settled there.

Apart from the pictures given in these personal memoirs, certain additional information is available regarding this period. In 1835, Surgeon Ranald Martin suggested to the Medical Board that I M S officers should be called upon to compile medico-topographical reports of their stations. A number of these were compiled and published, the best known being Martin's own report on Calcutta published in 1837, and Taylor's Dakka in 1840. Lesser-known surveys included —

“ Butter, D , Oudh and Sultanpur, 1839
 Dollard, W , Kumaon, 1840
 Irvine, R H , Ajmir, 1841
 Jacob, W , Jessore, 1837
 McCosh, J , Assam, 1837
 Macleod, D A , Bishnath (Assam), 1837.
 Rankine, R , Saran, 1839
 Strong, R P , Calcutta, 1844 ”

It is strange to note that the Civil Assistant Surgeon of those days was usually also Postmaster of his station, not infrequently Registrar and sometimes even sub-judge. An extract is given from *The Friend of India* for 31st December, 1835 —

“ We mean no disrespect to the Deputy Postmaster at Bancoorah and Burdwan when we say that he has no time to attend to all the minutiae of dawk arrangements on that extensive line of communication. He is Surgeon to the Civil Station at Burdwan, and has the management of an extensive private establishment of works. This privilege is fully conceded by the Regulations of Government, but it is a vicious system which allots pay so confessedly inadequate, as to render it necessary to grant liberty of private trade to make up the deficiency. The Judge and the Surgeon of the district have both received an equally liberal and expensive education in England to qualify them for the public service, yet there is so great a disproportion between their allowances, that the Surgeon receives but *one sixth* the pay of the Judge. The salary of the Surgeon ought to be so generous as to enable Government to command his exclusive services, and to require him to devote his whole time to the medical, police, topography, and statistics of the district, and in Burdwan at least he ought to be relieved from the charge of the postoffice ”

On 11th April, 1839, a letter arrived from the Court of Directors which instructed that members of the Medical Board and Senior Surgeons should wear uniform similar to that prescribed for I G s and D I G s respectively, of Her Majesty's forces. On the reaction of the Calcutta Medical Board to these orders, the *Asiatic Journal* remarked as follows —

“ There is somewhat novel state of things, regarding the members of the Medical Board, at present under the consideration of the higher authorities, and which, immediately relating to the

FLOWERING

question of military uniform, involves the higher one of military authority of several accounts (not substantially varying) which we believe to be the very long since, an order came out from the Court of Directors, decreeing that of Members of the Medical Board should be that of Brigadier Generals in the this, the senior member, Dr Sowers, considered that, as there was a uniform for that uniform should be worn at all meetings of the board, and he mentioned this to two members, Drs Smith and Campbell, and said that, at the end of a fortnight (a for the uniform to be prepared) they should appear accordingly. This, as a proposition rather than as an order, voted against it, and intimated to Dr Sowers was negatived by the majority of votes. He made no remark whatever upon this meetings as next ensued were attended in the old way,—plain cloth coat, or white jacket to the 'warm feelings' of the respective members,—until the first meeting occurred a violation of the fortnight's law, when, on Dr Campbell's entering the office in a white jacket who was himself in undress uniform, ordered him to go home and consider himself disobedience of orders. Home he went accordingly, and there he has remained ever since. Charges have been sent in against him by Dr Sowers grounded on his recusancy. They are before Government and the Commander in Chief, and we believe it is not found to decide how they should be dealt with " 68

It was extremely doubtful whether Dr. Sowers had the power to order arrest another member of the Board, though certainly the officers who complied with the order and appeared properly dressed. Government supported Sowers and gave explicit directions (1840) regarding the wearing of uniform by members of Medical Boards, even stating that all Presidents of Military Boards or Committees were responsible directly to the Commander-in-Chief in these matters.

New dress regulations for the Medical Service appeared in the same year (1840) and were detailed in the *Asiatic Journal*, Vol. XXXIII.—

"The full dress comprises a scarlet double-breasted coat, with white lining and turnback epaulettes of gold, corresponding to rank, a plain cocked hat; trousers of blue cloth or white linen, according to the season, a black leather waistbelt, and crimson and gold swordknot. Undress uniform included a blue frock coat, single-breasted, a blue cloth cloak, shoulder straps, a blue cloth forage cap, with gold-edged peak, trousers, sword, etc., the same as in full dress."

In 1844 the Royal College of Surgeons in England established the new grade of Fellow, and 227 of the most distinguished members of the College were elected to this honour. Of these 227 no less than 83 were officers of the Services, and of these 83 there were 29 members of the I.M.S.

In the period we are describing occurred two of the most remarkable escapes from death which are on record. The first concerns Charles Bonnor Chalmers, who entered the Bengal Service in December, 1840, and spent the early years of his service as Civil Assistant Surgeon of Simsbhum. He was a noted and successful *shikari* in days when, in the pursuit of big game, men had to rely on a ball fired from a smooth-bore gun. Crawford describes the following experience—

"On one occasion, he was following up a wounded wild buffalo in thick jungle, when the animal turned on him, threw him down, and gored him, one horn penetrating into his lung, from

behind, another ripping up his abdomen, causing the intestines to protrude, after which the buffalo thrust one horn through the large muscles of one of his thighs, carried him some distance, then dropped and left him. His native followers picked him up and carried him to his tent. While twisting himself about, trying to get a view of the wound in his back in a looking-glass, the intestines, which must themselves have been uninjured, went back through the wound in the abdominal wall. In spite of these injuries, and of the entire absence of any treatment other than his own, he made a perfect recovery, and served for nearly thirty years more." 69

Chalmers became Surgeon in 1854, served with the Gurkha force during the Mutiny, became Surgeon-Major in 1860, D I G in 1866 and retired in 1871. Crawford says that he personally met Chalmers in Scotland in 1880, when he had attained the age of sixty-one, and that he was then a hale strong man and looked very young for his age. He died at Brisbane nine years later.

The other escape was that of John McCosh, who entered the Bengal Service in 1831. Having contracted jungle fever in 1833 he was granted sick leave to Van Diemen's Land. The vessel in which he sailed was wrecked on the deserted island of Amsterdam on the night of 11th October, and out of a total of ninety-six on board, seventy-five lives were lost —

"I have already alluded to my having suffered severely from a jungle fever, contracted on field service. While proceeding to Van Diemen's Land, for the recovery of my health, the vessel was cast away, about one in the morning, upon the desolate island of Amsterdam, with the loss of seventy-six lives. I swam ashore, almost naked, a few minutes after the ship struck, sat on the bare rocks, under heavy rain, till daylight, clothed myself in various pieces of dress, as they lay on the shore, and let them dry on my person, subsisted upon putrid rice, and brackish water, and half roasted seabirds, and, for fourteen days, underwent all the concomitant hardships inseparable from such a state of uncertainty and destitution, yet I never caught so much as a cold." 70

The survivors were taken off the island by an American schooner. On his return to Calcutta, the unexpired portion of McCosh's furlough was cancelled. He served later in the Gwalior War, the Panjab War, and in the second Burmese War, being present at the capture of Rangoon and Bassein. He became Surgeon in 1847, retired in 1856 and died in London in 1885.

In 1856 Sir Ranald Martin, who later became Physician to the Secretary of State for India in Council, submitted to Government a Memorandum on the status of the Army Medical Officer, two paragraphs of which are of interest —

"It will not be contended that anywhere, even on the field of battle, the surgeon is of less importance than the Captain or the Major, in truth, the regimental Surgeon is here of far more individual importance than either. As regards personal hazards too, hardships, fatigue, privation, and death come by more ways to the surgeon than to the captain, and the surgeon knows it. 'In just reason,' then, there should be no distinction or difference whatever. For the good of the public service, I am quite assured that there ought to be none such, and to render the medical corps an establishment of reliance for all purposes, it must be raised to the position in the army which it deserves—it must be made a contented service.

"The grant of the military division of the Order of the Bath and that of the Victoria Cross to medical officers, would appear to settle their status in the army, but their actual position ought not to rest upon chance, or upon the mere occasional circumstances of a decoration. It should be

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PLATE VI



SIR RANALD MARTIN, F R S

[1810 f 107

Similarly, Surgeons were required for the recruiting depot for European troops, which the Company instituted towards the end of the eighteenth century. This depot was at first situated in the Isle of Wight, but later moved to Chatham. It was finally abolished in 1860 as the Crown had by then taken over the Army of the Company. All these posts were usually filled by retired Service officers.

Other posts which were instituted by the Company and maintained by them for short periods, and which were occupied by retired medical officers, included Lecturer on Diseases of Hot Climates (1809-19), Lecturer in Hindustani (1818-25), Librarian to the India Office, which office still continues, though the only medical officer who ever held it was the first incumbent, Keeper of the Company's Museum, later merged in the appointment of Reporter on the products of India.

Later appointments, somewhat outside this period, included the establishment of an Asylum for Insane Soldiers in the Company's Army in 1846, later taken over and kept by Government as the Royal India Asylum at Ealing, the appointments of Examiner of Surgical Instruments, and Examiner of Medical Stores, which still continue.

The Professorship of Military Medicine in the Army Medical School at Chatham, and later at Netley, was always held by a retired officer of the I M S until the closing of that School in 1905.

Up to the end of the eighteenth century, the Head Surgeons were in charge of the large General Hospitals for troops and their administrative powers outside their hospitals were somewhat vague. Ever since the foundation of the Service there had been an administrative grade though its title has varied from time to time—Head Surgeon, Superintending Surgeon, D I G, D S G, Surgeon-Colonel, Colonel. The rank of "Superintending Surgeon" was introduced about 1807 in substitution for that of "Head Surgeon"—the full designation being "Superintending Surgeon of Division". Promotion to this grade was usually by selection, for ability and merit. In a few cases officers were allowed to refuse promotion in order to retain their previous appointments. Two curious instances are quoted by Crawford. Thomas Yeld was appointed Assistant Surgeon in 1789 and Surgeon in 1803. He was for many years Civil Surgeon and Master of the Mint at Benares, where he lived in great style and entertained lavishly. Eventually, however, extensive defalcations were discovered in the Mint under his charge and he died by his own hand in 1829. James Ranken entered as an Assistant Surgeon in 1809, becoming Surgeon in 1823. He was for many years Superintendent of Post Offices in the North-West Provinces and later Postmaster-General in India.

It was not until 1873 that the Superintending Surgeons appeared in lists as Administrative Officers only. Their numbers varied from time to time, increasing as the strength of the Army increased. In Bengal an intermediate rank of Deputy Superintending Surgeon existed for a few years.

An interesting extract from the *Asiatic Journal* of January, 1837, gives the views of a Madras Medical Officer on his income and expenditure.

Court of Directors The Assistant Surgeon will then be sent to Dr Chambers, the Company's Examining Physician, with the undermentioned letter —

“ ‘ Sir — I have the commands of the Committee for passing military appointments, to request you will please to examine Mr _____ and certify whether he is now qualified in physic to serve as an Assistant Surgeon at any of the Company's Presidencies in the East Indies, and if not, at what period you think he may be sufficiently qualified to obtain your certificate ’ ”

“ The following regulations have been resolved on by the Court in reference to the examination by Dr Chambers —

“ ‘ That every person nominated as Assistant Surgeon be required to pass an examination in the practice of physic in which examination will be included as much anatomy and physiology as is necessary for understanding the causes and treatment of internal diseases, as well as the art of prescribing and compounding medicines

“ ‘ That upon the Assistant Surgeon presenting himself to Dr Chambers, he be required to produce to him satisfactory proof of his having attended one course of lectures on the practice of physic, and above all, of his having attended diligently the practice of the Physicians at some General Hospital in London, Edinburgh, Dublin, or Glasgow, for at least six months, and that unless he produce such proof, it be deemed a want of proper qualification, and be immediately reported as such by the Examining Physician, to the Committee for passing Military appointments

“ ‘ The Assistant Surgeon will likewise be required to attend one course of Dr Gilchrist's lectures in Hindoostance, for admission to which he will have to pay not more than three Guineas, and previous to his passing the Committee, he will be required to produce Dr Gilchrist's certificate of his having so attended *Dr Gilchrist's residence, 15, Arlington Street, Piccadilly*

“ ‘ The Assistant Surgeon will finally be required to execute covenants in the Secretary's office, and find security in two persons to the extent of £500, jointly and severally, for the due performance of those covenants *Stamps and Fees, £15 15s 6d*

“ ‘ *Passage Money* If the Assistant Surgeon should proceed in one of the Company's ships, he will have to pay £95 for his accommodation at the Captain's Table, or £55 for his accommodation at the Third Mate's Mess, and his passage money must be lodged in the hands of the Company's Paymaster, for the said Captain or Third Mate ’ ”

In 1828 “ The Assistant Surgeon will likewise be required to take a copy of the work published by Mr Annesley, entitled ‘ *Sketches of the most prevalent Diseases of India,* ’ and will then receive a certificate of his appointment, signed by the Secretary, for which he will be required to pay a fee of £5 in the Secretary's office ”

In 1843 “ He is also required to produce a certificate from the Cupper of a Public Hospital in London, of having acquired, and being capable of practising with proper dexterity, the art of cupping ”

In 1855 there appeared in the East India Register the regulations for the first competitive examination —

“ Candidates producing satisfactory certificates will be admitted to an examination to be held in January, 1855

“ The examination will include the following subjects —

“ 1 Surgery in all its departments

“ 2 Medicine, including the diseases of women and children, therapeutics, pharmacy, and hygiene

“ 3 Anatomy and physiology, including comparative anatomy

“ 4 Natural history, including botany and zoology

“ The examination will be conducted—

“ 1 By means of written questions and answers

“ 2 By object examinations and experiments, when the subject admits of such tests

“ 3 By practical examination at the bedside of the patient, and by dissections and operations on the dead body

“ 4 By *vis a voce* examination

“ The persons who shall be pronounced by the examiners best qualified in all respects shall be appointed to fill the requisite number of appointments as Assistant Surgeons in the East India Company's service ”

Previous to these examinations the nominations to both cadetships and medical appointments were in the hands of the Directors of the Company and formed a valuable piece of patronage. The sale or purchase of these appointments was absolutely forbidden and, if detected, the purchaser was liable to dismissal. Nevertheless, in *The Times* of 6th March, 1806, appeared the following advertisement —

“ FIFTY POUNDS may be had by procuring the Advertiser an ASSISTANT SURGEONCY in the East India Company's service. Address (postpaid) to A M , at Peele's Coffee-house ”

During the last twenty-five years of the nomination system, Commissions as Assistant Surgeons in the I M S were several times given by Directors of the Company as prizes at various Medical Schools.

It is interesting to note that from 1745 to 1800 the Corporation of Surgeons, London, issued an inferior diploma, or certificate, by which the applicant could qualify for appointments as a Hospital Mate or as Assistant Surgeon in an Indian Presidency. The Royal College of Surgeons, London, which succeeded the Corporation from 1800–22, afterwards becoming the Royal College of Surgeons, England, issued, during that period, a second diploma as Licentiate (L R C S) for the same purpose.

Owing chiefly to the philanthropic and unselfish work of John Howard, the great prison reformer of the eighteenth century, the conditions in hospitals in Europe had undergone drastic revision and India shared in these improvements. A number of hospitals were built, or projected. In 1824, in Bombay, new buildings were erected for the hospital in Hornby Road which took in sick from the civil population as well as from the garrison. In 1861 that institution was moved to temporary quarters in the grounds of the Artillery Barracks in Fort George. The foundation stone of the present St. George's Hospital was laid on 22nd February, 1889, on the site of the old Fort George, and the buildings were completed in 1892 at an estimated cost of over 5½ lakhs of rupees.

Hospitals for the Indian poor have been erected in large numbers, in great part owing to the liberality of the wealthier inhabitants of Bombay, which city has in this way presented a great contrast to the other Presidency towns. The Jamsetji Jijibhai Hospital in Parel Road (1843), the Gokuldas Tejpal Hospital (1875), the Pestanji Hormusji Cama Hospital (1886) are among the largest and best known.

In Madras, the General Hospital was reconstructed and considerably enlarged in 1859, and again in 1893. During these years it was used either entirely (1814),

or in part (1842-99) as a Garrison Hospital. Since 1899, it has served the civil population alone. The Royal Victoria Caste and Gosha Hospital for Women was founded in 1885. Some effort, though not a great one, was made in 1809 and again in 1867, towards the founding of hospitals for the Indian population alone.

In Calcutta the Medical College Hospital was founded in 1838 as a small clinical hospital with thirty beds in connection with the newly established college. The foundation stone of the Hospital as it is to-day was laid in 1848, but the building then erected has been extended and altered at various times. The chief additions have been the Eden Hospital (1882) and the Ezra Hospital (1887).

The first Hospital for the Indian poor in Calcutta was opened in 1793, the first year showing 115 in-patients and 101 out-patients. These figures rose in 1803 to 218 in-patients and 4,443 out-patients. Crawford quotes an interesting analysis of the admissions to the hospital from September, 1805, to August, 1806 —

Wounds	77	Dysentery	2	Tumours	1
Fractures	34	Fistula <i>in ano</i>	1	Dislocations	1
Venereal	4	Stranguary	5	Concussion of brain	3
Contusions	18	Locked jaw	2	Mortifications	3
Scalded and burnt	4	Spleen	3	Cholic	2
Dropsy	7	Rheumatism	2	Catarrh	1
Abscess	8	Cancers	2	Scurvy	1
Fever	15	Ulsers and sores	21		
Palsy	2	Excessive vomiting	1	Total	220

He notes that "operation cases are obviously few in number, but may be represented by stranguary (stricture), fistula-in-ano, abscess, cancers and tumours." The first Superintendent was John Shoolbred, who was appointed Assistant Surgeon in 1794, and Surgeon in 1807, retiring in 1821. He held the appointment of Superintendent during his whole service. In 1825, two branch dispensaries, now known as the Chandni Hospital, were opened, and the Mayo Hospital in 1874. Various special hospitals were also erected in Calcutta during this period.

Though Military Hospitals had been in operation for some time, it was not until the beginning of the nineteenth century that hospitals for the general population began to be set up in any of the principal up-country towns. A Public Letter from Calcutta, dated January 13th, 1804, reports that the benefits of the Native Hospitals in Calcutta have been fully realised, and that the Governors of the hospital have been directed to communicate with the senior civil servants at Dakka, Patna, Murshidabad and Benares with a view to opening similar hospitals in those towns. By 1853 there were fifty-five dispensaries at work in Bengal and the N W P, while fifteen more had been sanctioned for the Panjab. Soon after the annexation of Pegu, after the second Burmese War, a dispensary was opened at Rangoon (1854) and in 1871 new hospital buildings were erected in that town.

PLATE VII



SIR JOHN McNEILL, F.R.S.

[Ed. inc.] 113

FLOWERING

During this half-century there was a growing tendency for to be employed on duties which were of a political nature. One of these was John Crawford, who joined the Bengal Service in 1801, obtained political employment in Penang and in Java (1811-17), as an Embassy from the Company to the Court of Siam in 1820-23. In 1824 he was appointed by Sir Stamford Raffles as Administrator of Singapur, and in 1826 was appointed Civil Commissioner of Pegu, returning in July, 1827 to live in his house in Kensington for a further forty years. He wrote a number of books concerning further India.

Another interesting personality at that time was David (Lester, 1796-1846) Richardson first attended the lectures of J. B. Gilchrist and later received a certificate from Dr. W. Chambers of Curzon Street "qualified in Physic". In 1823 he requested the Directors of the Company might go to India as he had "applied himself with great diligence to the practice of Surgery." He was posted to Madras and accompanied the Engineers throughout the first Burmese War. He was then posted to Rangoon in the newly conquered British portion of the country, and was one of the Europeans to learn the Burmese language. For that reason he was absorbed in political service and sent on political and trade missions to Ava, Chiengmai, and Bangkok. He treated a Burmese prince for paralysis in 1830 and was made a nobleman by the King of Burma, a Burmese title, stamped on a thin strip of gold which was tied on his forehead and he was permitted to use a gilt umbrella. His work was entirely political. It is believed that he married a Siamese and his descendants are still in Moulmein.

The most successful of all of these officers, however, was John McNeill, who entered the Bombay Service in 1816, and saw active service until 1821, when he was appointed medical officer to the Mission at Teheran. In 1822 he went on furlough returning to Persia via St. Petersburg in 1823. At the close of the Russo-Persian War of 1826 he was employed by both parties in negotiating the payment of an indemnity by Persia to Russia. In 1830 he became Political Assistant to the Embassy at Persia and in 1835 Secretary to the Persian Embassy. In 1836 he left the Service of the Company, but only to travel as Minister Plenipotentiary and Envoy Extraordinary from the Court of St. James's to the Shah. He occupied various other high offices, was awarded the G. C. B., was made a Privy Councillor, and received the degrees of D. C. L. of Oxford and LL. D. of Edinburgh. He died at Cannes in 1883. Crawford says of him that, though many of his contemporaries may have been more successful financially, certainly none, since William Hamilton, had done better service to his country.

One of the strange stories of this period is that of Josiah Harlan, an American, who was appointed a temporary Assistant Surgeon in July, 1824, and served in the first Burmese War. When the Court of Directors, in 1827, insisted on the dismissal of all locally appointed Assistant Surgeons he was struck off, and took service under

Ranjit Singh, the "Lion of Lahore," King of the Panjab, from whom he received the rank of General, and the Governorship of the district of Gujrat. He quarrelled with Ranjit Singh in 1835 and left his service for that of the Amir of Afghanistan, with whom he remained until 1838 when he returned to America. He wrote his "Memoir of India and Afghanistan" in 1842.

Apart from the influence exerted in the administration of frontier districts by those medical officers who adopted a political career there is no doubt that those whose work among the tribes was of a purely medical character also played their part in the education of the tribesmen.

The *Indian Medical Gazette* for November, 1887 quotes a letter from General Sir Neville Chamberlain to Dr. David Boyes Smith, Professor of Military Medicine at Netley —

"You are right in supposing that I have expressed an opinion that the peaceful and civilizing influence of the work done in the dispensaries and by regimental surgeons on the frontiers of India, has been in political importance equivalent to the presence of some thousands of bayonets. I have held this opinion, because no amount of military coercion or of purity of administration could have exercised the same pacifying effect on the heart of the nations that has been produced by the sympathetic care and successful treatment of diseases, many of which had been previously considered incurable. Throughout my service on the frontier of India, I have never known a time when the halt, the lame, and the blind have not flocked into our cantonments or into our camps in search of relief from suffering, and, however distasteful may have been the sight of our soldiers, or however galling the idea of subjection to British rule, the people have come with confidence from far and wide to seek medical aid. The fame of the English doctors has spread beyond our frontiers into the remotest hills and glens, and the difficulties overcome and sufferings endured in order to reach a medical officer might seem incredible to those unable to realise what it is to be living under conditions devoid of medical and surgical aid.

"Another humanizing and reconciling influence has been the careful and sympathetic treatment of the wounded enemy who have fallen into our hands, and the fact of their being liberated and sent back to their homes when cured.

"It is because of such unexpected philanthropy that, as conquerors, we hold a position in the minds of the people which would not otherwise be possible. The great question to be solved in the future is that of how to bridge over the chasm which separates the rulers from the ruled. The means of accomplishing this end may be mainly looked for in the sympathy to be created between the races, and I think the medical profession will always have it in their power to give most important aid towards the attainment of this object."

Medical Officers have also played their part in the foundation of some other departments. We have already referred to James Ranken who was Postmaster-General in the N W P from 1854-59, becoming in July, 1861, Director-General of the Post Offices in India and holding that office until his retirement. Another I M S officer, Elijah Impey, acted as Postmaster-General of Bombay from 1856 to 1868, while yet a third, Sir John Logan, was the first Postmaster-General to be appointed in the Punjab.

As regards Education, Thomas Alexander Wise, who was appointed Assistant Surgeon in 1827, founded Hughli College in 1836 and acted as its Principal in addition

HOWLING

to his duties as Civil Surgeon. In 1839 he became Secretary of Education and was succeeded both as Civil Surgeon and as Prime Minister by James Esdaile. That remarkable man was born at Montrose, M. D. in 1829 and became an Assistant Surgeon in February, 1831. By his experiments in mesmerism, by which he demonstrated the possibility of performing major surgical operations without pain under an anæsthesia caused by mesmerism. In the course of eight months he performed seventy-three operations rendered unconscious by mesmerism, including amputation and excision among which were fourteen excisions for elephantiasis scroti, one of which weighed as much as 80 lbs. Apparently there was no pain with any of them.

The Government, on receiving an account of these operations, ordered experiments to be performed at Calcutta, and appointed a Committee to report on the results. Of the first ten patients, three would not come under mesmeric influence, but the remaining seven were operated on without pain, and these included the removal of a large tumour, an amputation of the thigh and a minor operation. The Committee was favourable and a mesmeric hospital was opened for one year in the Strand Lane, Calcutta, in November, 1846, into which cases of all kinds were sent. The hospital was closed in January, 1848, in spite of a petition to the Government from the Calcutta public that it should be kept open. Permission was given for continuance by public subscription, and the hospital was reopened for the further year. Meanwhile, Esdaile had become one of the Presidency Surgeons. He continued to practise mesmerism until he left India in June, 1851.

The greatness of the advance made by Esdaile in the practice of surgery is shown by the sight of the introduction of ether and chloroform. It was in 1846 that Sir James Simpson made his first experiments with ether, the use of which in surgery has been recently demonstrated by an American Dentist, W. T. Morton, and in 1847 he essayed on himself and his assistants the effects of chloroform. Prior to the experiments of Esdaile little advance had been made in dulling the pain of operations and surgeons had had to develop a technique of extreme rapidity so as to be enabled to operate at all, while the most that a patient could expect was a stiff whiskey to relieve his agony. "The patient was first given a fair dose of wine," writes Schoute of an operation on board a Dutch ship in the eighteenth century, "after which he was inspired with courage and the operation was carried out"—and indeed, much courage must have been required. There can be no doubt that, had it not been for the discovery of the anæsthetic properties of ether and chloroform, the successes of Esdaile's methods would have been broadcast to the world, and he himself regarded as one of the greatest benefactors of humanity. It is true that not every person is susceptible to mesmeric influence, and that the method is not sure, nevertheless, the advance was a great one, and most patients would gladly have accepted the chance of its efficacy, rather than endure the attentions of a surgeon of that age with no anæsthesia at all. F. W. H. Myers, in his "Human Personality, and its Survival of Bodily Death," gives his opinion of Esdaile's work —

“ Next came the era of Elliotson in England, and of Esdaile in his hospital at Calcutta Their method lay in mesmeric passes, Elliotson’s object being mostly the direct cure of maladies, Esdaile’s deep anæsthesia, under which he performed hundreds of serious operations His success in this direction was absolutely unique,—was certainly (setting aside supernormal phenomena) the most extraordinary performance in mesmeric history Had not his achievements been matters of official record, the apparent impossibility of repeating them would probably by this time have been held to have disproved them altogether ”

Dr Crawford W Long, in the U S A , had experimented with sulphuric ether before 30th March, 1842, when he first used it in surgical operations for the removal of a tumour of the neck and many people hold that he was the actual prime introducer of anæsthesia into surgery It is interesting to note that he held up the use of this method for some time because as he said “ there were physicians high in authority and of justly distinguished character who were the advocates of Mesmerism and recommended the induction of the mesmeric state as adequate to prevent pain in surgical operations ” (See *Bulletin History of Medicine*, Vol XII, 2, July, 1942, article by Hugh H Young)

We have referred to the custom by which I M S officers, when acting as Civil Surgeons, assumed the duties of Postmaster, Registrar or even sub-Judge of their Districts, and Crawford states in this connection that “ appointments as Registrar might be extracted from the *Gazettes* in dozens, as Post Master in scores ” Sir William Brooke O’Shaughnessey, while Professor of Chemistry in the Calcutta Medical College, conducted the first experiments for the introduction of the Electric Telegraph into India. He was appointed Director-General of Telegraphs in 1852

In the Natural Sciences we have the Botanists Robert Wight, William Griffith, Thomas Thomson and Thomas Anderson, the Zoologists Clarke Abel, Thomas Jerdon, the author of that beautiful book “ *The Birds of India* ” and other works, and George Wallich, the son of Nathaniel Wallich the Botanist, and the Geologists Hugh Falconer, John McClelland and Hugh Carter

In Economics and the practical sciences, John Forbes Royle was appointed Reporter on Economic Products to the Company from 1847–57 and represented them at the Great Exhibition of 1851, and at that of 1855 in Paris Members of the I M S took a large share in the organisation of the Forest Department, and the following names occur Alexander Gibson, John McClelland, Hugh Cleghorn and John Lindsay Stewart These men held the first appointments which were made of “ Conservators of Forests ” William Jameson played an important part in the cultivation of tea in India, while Emmanuel Bonavia advocated the cultivation of the date-palm and of oranges

In Veterinary Science, until quite recently, such work as was done, apart from that of a few Veterinary Surgeons in Cavalry regiments, was done by officers of the I M S , and W Gilchrist, John Shortt and K McLeod published text-books

In the field of Philology, the foundations laid in the study of Oriental languages in the previous century by officers of the Service were built upon by such men as John Leyden (b 1775) who, after studying at Edinburgh, was licensed as a preacher

FLOWERING

in the Church of Scotland, at St Andrews in 1798. He was not, in the Church, preferring rather to collaborate with Sir Walter Scott Minstrelsy." He became interested in the East by reading the "Park," whom we meet in the section dealing with the sea service and was enthused with the desire to imitate his achievements. His appointment in the L.M.S., if he could secure a medical qualification obtained both the F.R.C.S. of Edinburgh and the M.D. of St Andrews only six months' study. He arrived at Madras in August, 1803, and during his period of service at the General Hospital, was sent to survey Mysore and report on the geology, the crops, the languages and diseases of that State. He travelled in Cochin, Malabar and Penang, and in 1806 was transferred and appointed Professor of Hindustani in the College at Fort William. A year, after only three years in the country. In 1808 this many-sided man was made Judge of the twenty-four Parganas, in 1809 Commissioner of the Court where, according to his own account, he devoted his time chiefly to hunting robbers. In 1810 he was appointed Assay Master of the Mint. In 1811 he accompanied the Governor-General, Lord Minto, to Java as his interpreter, was present at the capture of Batavia in August, 1811, and on the 27th of that month closed his and adventurous career by dying at Cornelis, Batavia, at the age of thirty-seven from fever contracted while examining manuscripts in a damp and ill-ventilated room. He wrote a number of works on Eastern Languages, translated the Memoirs of the Emperor of China and compiled Grammars of Malay and Prakrit. As if all the above were not enough for him to have compassed in eight years of service, he translated the Gospels into Pushtu, Baluchi, Maldivian, Macassar and Birjis.

Among the other linguists of the Service the following require mention. Crawford, who, while working as a political officer, published a Dictionary and Grammar of the Malay language which was for many years a standard work. James Atkinson, who made many translations of Persian Classics, wrote original works and made translations from the Italian and was the author of a work on Lithotomy, which he published nearly half a century before that great advance in surgery came into general use. Atkinson was also an artist of considerable ability and an example of his work is included as a frontispiece to this book. Horace Hayman Wilson while acting as Assay Master to the Calcutta Mint, in which department he spent the whole of his service, was able to devote his ample leisure to the study of languages, on which subject he published more than thirty works. He became, in 1811, Secretary of the Asiatic Society. On his retirement in 1834 he was elected Boden Professor of Sanskrit at Oxford and, in 1836, Librarian to the India Office, holding both of these appointments until his death in 1860. He was keenly interested in the Drama and managed the Calcutta Theatre for many years. His wife was a granddaughter of Mrs Siddons.

Last, but not the least remarkable, of these intellectual giants of the Service was Aloys Sprenger, who was educated at Vienna and Leyden, taking his M.D.

in 1841. Soon after he joined the Service he was appointed Principal of the Mohammedan College at Delhi. In 1848 he was transferred to Lucknow as Assistant Resident and, in 1850, to Calcutta as Principal of the Madrasa and Persian Translator to Government. He retired in 1859 and took the post of Professor of Oriental Languages at Berne, which he held until 1881. His vast collection of Oriental manuscripts was purchased by the Prussian State Library. The list of his works is a long one, and it was reputed that he knew twenty-five languages.

Concerning literature proper, Crawford tells us that "under this head no member of the I M S can claim a place of any importance. No work of anything like the first rank has ever been produced by any member of the Service. . . Many men have tried their hands at writing novels, but without much success. To Indian History members of the I M S have contributed many volumes. If none can claim to rank among the great histories of English literature, many are sound works of some historical importance, and many are interesting to read." He gives a certain number of titles, but without any great enthusiasm.

He informs us also that "no account of this period would be complete without some reference to Simon Nicholson, the most successful, and possibly, according to the lights of his time, the best physician who ever practised in India."

Born in 1779 in the manse at Kiltarlity in Inverness-shire and educated at St George's Hospital in London, he was posted to the Madras Service in 1806, but never joined it, being gazetted instead to the Bengal Service as Assistant Surgeon in February, 1807. He spent his whole professional life in Calcutta, becoming Surgeon in 1820. From 1807 to 1820 he served in the Calcutta General Hospital and from 1820-32 as Surgeon to the Calcutta Native Hospital, resigning that post on account of ill-health, and making a two years' stay at the Cape. On returning to India, in 1833, he was appointed Surgeon to the General Hospital and held that post for twenty years until his death in 1855. It was Nicholson who first brought James Ranald Martin to the notice of the Governor-General in 1823. Ten years later Martin succeeded Nicholson as Surgeon to the Native Hospital, and held that appointment until he left India in 1840. It was while he was in Calcutta that Martin introduced into surgery the use of injections of Iodine for the treatment of Hydrocicles. His excessive use of that evil-smelling substance caused his hospital to be known as the "Lal" (red) Hospital.

Nicholson left no published works and nowadays he is almost forgotten—but, says Crawford, no officer in the I M S ever stood higher in the public and private estimation of his contemporaries. He was described in a long-forgotten novel by Sir John Kaye—"Peregrine Pulteney"—

"He was a tall, rather upright man, dressed according to the season, all in white, and there was something about him well calculated to attract the attention of even an indifferent observer. Apparently rather more than half a century old, his hair was quite grey, cut rather short, and brushed straight off his forehead, which was high, but not very broad, with rather projecting brows, and an aspect certainly of superior wisdom. He wore spectacles, which rested upon a nose very well

calculated to support them, being no insignificant feature in his face, and his manner was not easy to understand at first glance. When Peregrine first saw him, he to be sure was indeed that the whole expression of the stranger's face was rather severe but when Dr Fitz-Simon held out his hand to Peregrine, and said that he knew him for the first time under such unfavourable circumstances, our hero thought he saw a face so full of genuine benevolence, nor a mouth that relaxed itself into a smile as the "good doctor's."

His portrait, which we reproduce, hangs in the room of the Calcutta Medical Society and, in a "Descriptive Catalogue of Paintings in the Possession of the Society of Bengal," by C. R. Wilson, this reference to him is given.

"His practice was only limited by the impossibility of performing more than a couple of operations within a certain space of time. One carriage was always kept ready waiting, to enable him to attend to any call without delay."

In accepting his resignation, the Governor-General, Lord Dalhousie, thus complimented him as having long possessed—

"in a measure rarely equalled, the confidence and reverence of your professional brethren, the respect and esteem of the community among whom you have passed your life, the approbation and gratitude of the Government, to whose service you devoted a long and valuable and distinguished labours."

Mention must be made of one other outstanding officer of this period—Lt. Hare, who introduced the practice of giving quinine in fevers without waiting for remissions. The adoption of this treatment undoubtedly saved many lives, and put an end to the custom of bleeding in fevers. Hare was one of the most distinguished military medical officers of his generation. He took his commission in February, 1830, became Surgeon 1853, Surgeon Major 1859 and D.L.G. 1864. He retired in 1866, and died in February, 1897. He saw considerable war service—the first Afghan War, where he served at Kabul in 1840, in the Kohistan Campaign and Sale's defence of Jalalabad. He was mentioned in despatches in 1842, receiving the thanks of the Government and the Afghan and Jalalabad medals. He served in the second Burmese War in 1852 and was present at the capture of Pegu. In the Mutiny, he was in medical charge of the 2nd European Bengal Fusiliers throughout the siege of Delhi, including the final assault and capture of the city, was again mentioned in despatches and received the Medal. His life was written by his son, who succeeded him in the I.M.S. ("Memoirs of Edward Hare, C.S.I.," published in 1900).

1857—THE MUTINY

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FLOWERING

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"His practice was only limited by the impossibility of performing more than a certain amount of work within a certain space of time. One carriage was always kept ready waiting, day or night, to enable him to attend to any call without delay."

In accepting his resignation, the Governor-General, Lord Dalhousie, wrote to him as having long possessed—

"in a measure rarely equalled, the confidence and reverence of your professional brethren, the universal respect and esteem of the community among whom you have passed your days, the approbation and gratitude of the Government, to whose service you devoted a long course of valuable and distinguished labours."

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The Mutiny, which commenced in May, 1857, was practically confined to the Bengal Army, including the irregular Corps in Rajputana and Central India. It was, therefore, only to be expected that all the I M S men who lost their lives during that period would belong to the Bengal Service. In all they numbered twenty-eight of whom nine perished at Cawnpore.

The following is a list of those who were killed —

- “ S S James Graham, killed by mutineers at Sialkot, 9th July
 Acting S S Christopher Garbett, died in Wheeler's entrenchment, Cawnpur, June
 Surgeon Thomas Smith, invalid establishment, killed by mutineers at Meerut, 10th May
 Surgeon Henry Hawkins Bowling, killed by mutineers at Shahjahanpur, 31st May
 Surgeon Kinloch Winlaw Kirk, killed by mutineers at Gwalior, 13th June
 Surgeon Nathaniel Collyer, killed at Cawnpur, 27th June
 Surgeon William Robert Boyes, killed at Cawnpur, 27th June
 Surgeon Arthur Wellesley Robert Newenham, killed at Cawnpur, 27th June
 Surgeon Thomas Godfrey Heathcote, killed at Cawnpur, 15th July
 Surgeon Samuel Maltby, killed at Cawnpur, 15th July
 Assistant Surgeon John Macdowall Hay, killed by mutineers at Bareilly, 31st May
 Assistant Surgeon John Colin Graham, killed by mutineers at Sialkot, 9th July
 Assistant Surgeon Hartwell Garner, killed by mutineers at Sigauli, 23rd July
 Assistant Surgeon Robert Dallas Dove Allan, killed at Cawnpur, 27th June
 Assistant Surgeon Thomas Moore, killed by mutineers on road from Cuttack to Sambalpur,
 17th Nov
 Assistant Surgeon William Barker MacEgan, killed by mutineers at Jhansi, 7th June
 Assistant Surgeon Robert Lyell, killed in a riot at Patna, 3rd July
 Assistant Surgeon Horatio Philip Harris, killed at Cawnpur, 12th June
 Assistant Surgeon George Hansbrow, killed by mutineers at Bareilly, 31st May
 Assistant Surgeon John Pierce Bowling, killed at Cawnpur, 27th June
 Assistant Surgeon Anthony Dopping, killed by mutineers, Delhi, 11th May
 Assistant Surgeon Robert Henry Bartrum, killed in action in advance on Lucknow, 26th Sept
 Assistant Surgeon Marcus George Hill, killed by mutineers Sitapur, 2nd June
 Assistant Surgeon Daniel Macauley, killed at Cawnpur, 15th July
 Assistant Surgeon Edmund Darby, died of wounds in Residency, Lucknow, 27th Oct
 Assistant Surgeon William Henry James, killed by mutineers, Agar, Central India, 4th July
 Assistant Surgeon Thomas Hewlett Woodward, killed in action, Delhi, 31st August
 Assistant Surgeon Henry Thomas Cary, killed by mutineers, Mehidpur, 8th Nov ”

At least ten other medical officers succumbed to disease and hardship and many others were wounded, one of these being Surgeon William Brydon, whom we have previously noted as being the sole survivor of the Kabul massacre. He was shot through the loins while sitting at dinner in Gubbin's house in the Lucknow Residency. The Army Medical Department also lost many killed and wounded.

General Wilson's despatch, reporting the capture of Delhi, mentioned the following medical officers —

“ S S Edmund Tritton

“ S S Campbell Mackinnon

(M D)

Surgeon Edward Hare, 2nd Fusiliers
 Surgeon James Peter Brougham, First Fusiliers
 Surgeon David Scott, Medical Storekeeper
 Assistant Surgeon J. J. Clifford, 9th Lancers (A M D)
 Assistant Surgeon W. F. Macintyre, Commander-in-Chief's Staff, (A M D) "

The despatches of Brigadier Inglis on the siege of Lucknow mentioned following —

" Surgeon William Brydon, 71st Native Infantry
 Surgeon John Campbell, 7th Light Cavalry
 Surgeon George Mathieson Ogilvie, Sanitary Commissioner
 Assistant Surgeon Boyd, 32nd Foot (A M D)
 Assistant Surgeon Joseph Fayrer, Civil Surgeon.
 Assistant Surgeon Samuel Bowen Partridge, 2nd Oudh Irregular Cavalry
 Assistant Surgeon Henry Martineau Greenhow.
 Assistant Surgeon Robert Bird, Artillery
 Assistant Surgeon Edmund Darby "

Of this last list, Brydon, Campbell and Ogilvie were awarded the C B, while Fayrer, Partridge, Bird and Greenhow were promoted to Brevet Surgeon. Fayrer became Professor of Surgery, and Partridge Professor of Anatomy, at Calcutta and Bird Civil Surgeon of Howrah. All survived for over thirty years.

The final capture of Lucknow brought the Mutiny to an end, except for the clearing up of scattered parties. Lord Clyde (Sir Colin Campbell) in announcing this (21st February, 1859) paid a tribute to the Medical Department

" To His Excellency the Right Honourable the Governor General, Headquarters Camp, Lucknow, February 21st, 1859

" My Lord,—The military operations in the Presidency of Bengal, which ensued on the great Mutiny of 1857, having happily been now brought to a close, I have the greatest satisfaction in recommending warmly to your Excellency's protection two great departments of the military administration, to which the troops and the officers who have commanded them in their long campaigns are under real and great obligations. I allude to the medical and commissariat departments

" The former, being composed of officers belonging to the two services, has shone equally in the matters of general organisation and of regimental arrangements. The Director-General, Dr Forsyth, and the Inspector General of Her Majesty's Forces, Dr Linton, C B, in Calcutta, have worked successfully to meet the great requirements made on them, and the staff and regimental medical officers have well maintained the credit of their noble profession, and the reputation for self-sacrifice which belongs to the Surgeons of Her Majesty's Armies,—a reputation which is maintained in the field on all occasions, as well as in the most trying circumstances of the hospital

" Clyde, General, Commander-in-Chief, East Indies "

In 1907, half a century after the Mutiny, more than ninety members of the I M S who had entered before May, 1857, were still alive. By May, 1913, these had been reduced to forty. Before the end of that year four more had died. The last I M S survivor of the Mutiny, Deputy Surgeon-General Philips Warren Sutherland, died in May, 1925.

THE SEA SERVICE OF THE COMPANY

*“ As when farr off at Sea a Fleet descri’d
Hangs in the Clouds, by Æquinoctial Winds
Close sailing from Bengala, or the Iles
Of Ternate and Tidore, whence Merchants bring
Thir spicie Drugs ”*

MILTON, P. L. II, 636-40

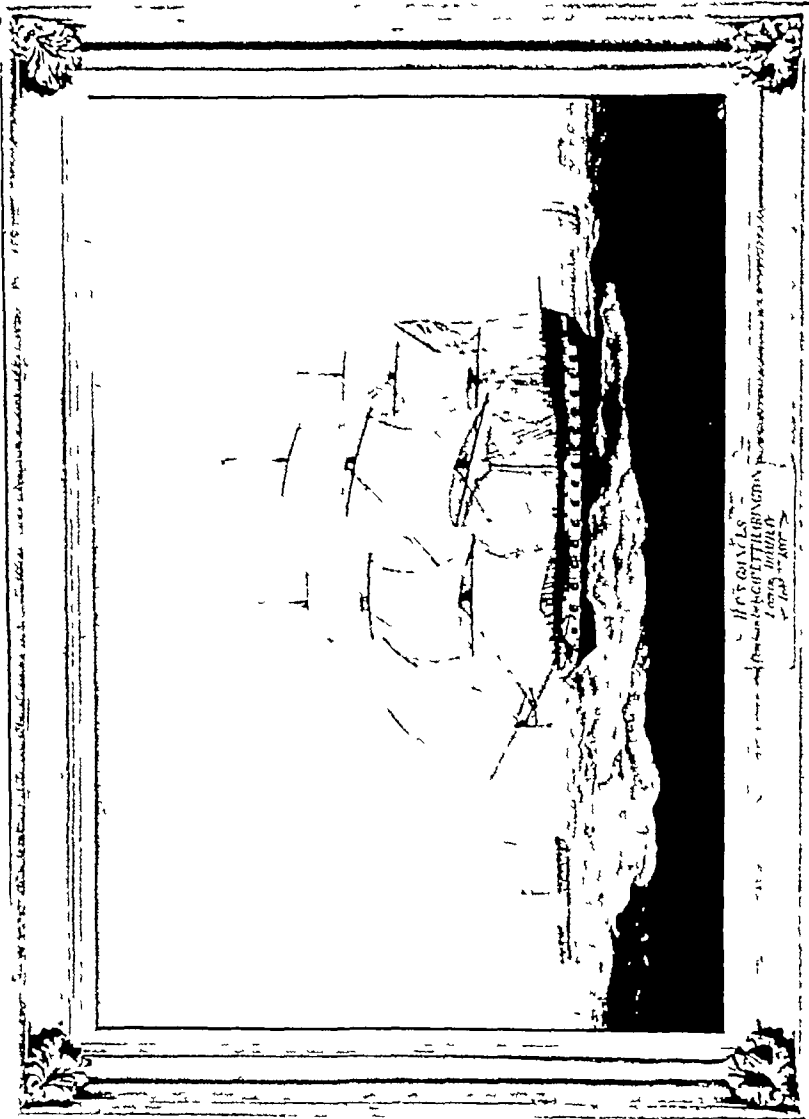
During the two and a half centuries in which the Company maintained their Eastern Trade they were under the constant necessity of maintaining also an extensive service of vessels of all sorts both for the transportation of merchandise and for giving passage to their servants to and from their Eastern Settlements. From the earliest times the Company provided also the necessary medical arrangements for the crews of those ships. We have noted the condition of medical practice in the sixteenth and seventeenth centuries and learned that it was not to be expected that the Service of the Company would attract the cream of the profession. Furthermore, of those that did accept such service, the best men did not take up work with the Marine Branch.

From the “ Occidental Therapeutics in the Netherlands East Indies during Three Centuries of Netherlands Settlement (1600-1900),” by Dr. D. Schoutc (N. I. Public Health Service, Batavia, 1937), we learn many interesting facts regarding these early voyages. Conditions in the Company’s Sea Service must have been very similar.

When Portugal was conquered by Spain in 1580 the Dutch, who had been collecting the produce of the Indies from Lisbon and distributing it over the Continent, having the use of the port of Lisbon denied to them, found that they had either to abandon the trade or fetch the produce themselves. They chose the latter course and began to construct vessels stout enough to face the perils of the long journey round the Cape, and well enough equipped to withstand not only the forces of Spain, but also the innumerable pirates who infested the seas.

Those vessels, serving the double purpose of transport and of defence, had not much room left for the crew who, indeed, suffered the greatest discomfort when in health, while in sickness they endured the torments of hell. The causes of disease were but little understood and the practitioners who were content to sail under such conditions were of the lowest type. Two fleets went out each year in spring and autumn through the English Channel, unless there was a war with England, to the Cape Verde Islands, then across to the coast of Brazil where, off Rio de Janeiro, they braved the dangerous reefs of Abrolhos. Safe negotiation of this passage was celebrated by the service of thanksgiving which was ordered to be used at such a time. Thereafter the voyage continued, with the help of trade winds and of the current

PLATE IX



By courtesy of the Parker Galleries, London

THE "GANGES"—INDIAMAN

[Facing p 122

FLOWERING

to the East, towards the Cape of Good Hope and thence to the India homeward voyage the journey was usually by the West Coast of Africa at St. Helena. The outward journey would last on an average for six months. It is noted that a trip in 1621 made by *De Gouden Leeuw* in four months and was considered so unprecedented that the crew were granted a reward of 1000 guilders. The death-rate on such journeys might vary from 2½ per cent to as high as 30 per cent on the same ship on a difficult voyage, the average being below 8 per cent. It was recorded that, in 1639, two ships made the voyage in 115 days respectively "to the great astonishment, right through the sea with a healthy crew."

There was some possibility of ventilating a three-decker even in foul weather, but the situation on a well-decker as regards air was incredibly bad. The hatch could be opened just large enough to admit one man but, in foul weather this was so protected with a canvas funnel that there could be no ventilation. Can it be wondered at that, in spite of attempts at cleansing the air by burning gunpowder or juniper shrubs and spraying vinegar, disease frequently broke out on these ships?

Another problem was the feeding of the crew —

"For preserving food-stuffs, three methods were known at that period, viz drying, salting and shipping live stock. The first expedient was adopted on a large scale in the case of cod, fish, apples, the second in the case of vegetables, meat and fish, the third in the case of live chickens, sheep and pigs. Butter would be packed in vats closed airtight as best as could be done, and cheese would be preserved by the sailors, each of whom was allotted some heads of cheese when sail was made by dipping them into tar. All these expedients had their drawbacks, soaking dried victuals required much water that could badly be spared when the fresh water stock ran low, pickled goods would get spoilt in spite of all precautions, especially meat would reek and get improper for consumption in the tightly coopered barrels, chickens, sheep and pigs had to be kept in the well and not very seldom they came to grief from breakers in heavy seas, butter would become rancid in spite of hermetical packing, the tarred cheese acquired a disagreeable taste. Even such products as flour, groats and rice did not admit of preservation for any length of time, getting not only spoiled so that the bread made from them became uneatable, as was also the case with dishes made of groats and rice, but the stocks became weevilly on long trips just as well as the ship's biscuits."

"But what most of all caused misery on board, was the tormenting thirst when the ships lay motionless on the line or were bound by a prolonged calm, when the stock of water ran short and the heat compelled people to drink. Drinking water was shipped at home in big tuns or standards, mostly made of heavy oak capable of resisting the flames when sulphuring them to destroy the vermin, before filling, as was usual to do. When the water began to smell or contain too many worms during the voyage, both of which often occurred, the tun would first be opened to air it, after which it would be disinfected as best as could be done by dipping glowing iron or a big heated cannon-ball into it, mostly a thirty-pounder. Sometimes this gave splendid relief, but by far not always, and people were generally relieved when tropical rains filled up the stock, although the rain water collected in tarred sails, acquired an after-taste. Often the distribution of beer which was mostly carried on board, helped to attenuate the calamity of water shortness."

"It goes without saying that only rarely all food-stuffs combined together to leave the crew in the lurch at the same time, but often enough the deterioration of part of the foodstuffs cut down

the rations to a large degree and rendered the fare rather monotonous. The consequences of this were only too frequently disastrous to the occupants of the vessel."

(Schoute, *loc cit*, pp 14,15)

Chief of the diseases suffered from was Scurvy. It was well known at the end of the sixteenth century that fresh foods quickly cured this disease, and attempts were made to lay out gardens on board ship. In 1632, on the ship *Grol*, a small garden was laid out in February from which during March cress, lettuce, radish, horse-radish and scurvy-grass were served out to the sick, but in April a breaker washed the whole garden overboard.

"The number of sufferers from Scurvy speedily increased after that event. On May 28th there were 25 sick, on June 14th 50, the head Surgeon on board had succumbed meanwhile, and when the ship arrived off the Cape, there were no hands left to handle the sails, on the Bantam Coast fresh people had to come from shore to help weighing the anchor, the crew being too weak to do that work."

And that was the usual experience. The surgeons knew that some defect in feeding was the cause of Scurvy and therefore they gave to the sick wine, fruit juice, especially lemon, and such fresh foods as were obtainable. For prevention, directions were given that extracts of horse-radish and scurvy-grass should be mixed with the drinking water.

Though it was known that Scurvy could be cured by going on shore, so great was the dread of taking on board some fever even more horrible that Captains of vessels strictly forbade their crews to have any communication with the shore when the ships stopped for provisioning. Those who were actually sick were, however, put on land to recover. Scurvy had, after all, come to be looked upon as almost a normal and unavoidable evil associated with voyages, whereas with those other mysterious fevers the ship's surgeons felt quite unable to cope.

Knowledge of diseases special to the tropics diffused but slowly into the general consciousness. The earliest writer on Tropical Medicine was Garcia da Orta, who, as we have already noted, laid out a garden for the study of medical plants in the neighbourhood of where Bombay now stands. In 1561, at the age of seventy-odd years, he settled in Goa and, in 1563, published there his book "Colloquies on the Drugs of India." Da Orta described cholera and dysentery in great detail and appears to have been an accurate observer. His book gives many quaint details of his life and times.

Thirty-five years later, in 1598, the first book on Tropical Diseases in English was published by George Watson—"The Care of the Sick in Remote Regions." At that time the British were only beginning to interest themselves in the tropics, and it still remained to the Portuguese to set out their much riper experiences of these diseases in manuals and even in monographs such as that on Sleeping Sickness (*Trypanosomiasis* or "Mal de Indoa"), by Alexo da Abron, published in 1623.

In 1629 the study of Tropical Medicine was continued by Jacobus Bontius with his "Methodus Medendi." His book "De Medicina Indorum" was published

FLOWERING

in 1642, and passed through its latest edition in 1931, three hundred years after the death of its author—this time with an English translation

A few years after the publication of that book in 1642 there appeared a work by William Piso (1658), two extra chapters based on researches Piso had obtained his experience in Brazil in the service of the East India Company and evidently used the earlier author's notes to re-arrange and re-comprehensivise his treatise in fourteen books—"De Indiae utriusque re medica"

In spite of these stirrings in the world of knowledge we find that the text issued by the Company to its doctors at Port St. George in 1678 was "Culpeper's Dispensatory"—a translation into English of the London Pharmacopoeia, in 1649. Culpeper in 1649. Garrison described Culpeper as "a famous herbalist and a salver" but no doubt that made very little difference to the Honourable Company or indeed to the medical profession in general at that time

As we have already noted, it was in 1617 that the first edition of John Woodall's "Surgeon's Mate" appeared—containing his "directions as regards the preservation of health on board ships, to be delivered to the commanders of all the Company's ships, and by them observed on the voyage" (Sainsbury, "Calendar," Vol. I). Though books on Military Surgery had been in use for some time, Woodall's appears to have been the first manual written specially for the use of ship's surgeons

We have, from time to time, referred in these pages to various members of the Sea Service, and it is now proposed that, before passing on to discuss the winding up of the affairs of the Company, a short review shall be given of this side of their activities. The main authority for the earlier part of this record is Sainsbury's "Calendar of State Papers, Colonial Series (1513-1634)". One entry in the "Calendar" contains a sporting offer from Surgeon George Turner which, however, the Company were not prepared to accept. This is perhaps not to be wondered at, as they had recently included his name in a list of their servants as "an unprofitable chirurgeon" drawing £40 a year

"Court Minutes of E. I. Co., 27th Jan., 1625/26 (Vol. IV, p. 143, No. 248)" —

"George Turner, late Surgeon in the *William*, offered his services in the Indies for five years, on condition of being paid 500*l* at the end of that time if he be alive, but if he die within the time then to expect nothing, he was offered 50 *l* per annum upon that contingency, but utterly refused same"

Life on board an Indiaman in those days was, as we have seen, not a bed of roses. "Why, Sir," as Doctor Johnson succinctly put it, "no man will be a sailor who has contrivance enough to get himself into a jail." Surgeons, in addition to their basic pay, received 10*s* per head for attending men in the Company's Army on the ship. Voyages took a long time, and unless the Surgeon settled down well with the Commander his life must have been a very poor one. It is on record that Andrew Trumbull, Master of the *Hopewell*, in 1643, admitted chastising his Surgeon, who was possibly the famous Gabriel Boughton, with a rope's end. We have also a long

letter of complaint from John Leckie, Surgeon of an Indiaman in 1695, addressed to his Captain, which though it begins with a sentence of almost unprecedented length, conveys even after so many years a fine savour of outraged feelings and justifiable indignation —

“ Goombroon, August the 24th, 1695

“ Capt Edgcombe—Sr The many abuses I have received from you, with your unjust, illegall and arbitrary proceedings against me by a pretended power as Capt of an East India Ship, hath made me assume the liberty to informe you that your beating me with your cutlass at Mohilla upon the 15th March, with your beating and wounding me of 19th June, as also beating my servant and barber the same day without any crime and your makeing me fast in order to duck me upon the 21st June, which is the next punishment unto death and not to be inflicted without martiall law after a sufficient triall and proof of being guilty of some notorious crime, but your accusation proving false both before your officers and men rendered the ducking odious to them, in so much that they would not obey you notwithstanding your cutlass and threatening, knowing innosense and your justice, your sending your Steward to your cooke, with your order not to let the barber or my servant come into the cookroome, and if they come to take notice that they should not throw any of my powders amongst your victualls, for you did believe yourself poysoned or had gotten a dose already in your water gruell, because for the four dys past you was not well nor could not eat, your detaining me as a prisoner on board without letting me know the cause, your keeping and detuning three pints of Cordiall waters on board belonging to me wch I had presented to Mr Popham in a small case of his, your hindering me from sending some goods ashore which I had the Companies liberty for, your denying severall other priviledges that are due to me as chirurgeon, your threatening me with the law of Olerone, which I presume you have forgetting, or else would not have exceeded them so often as you have done this voyage, Sr you may impose upon some of your officers and sailors who do not understand them laws, but know that I have read all the marine laws in practice, and particularly those of Olerone Wisby and the Hanstownes, with the statute laws appointed by King Charles the second for the regulating the Navy Royall, with Jure Maritime and Lex Mercatoria relating to marine laws, and have read some of the common and statute laws of England, as also of the civil laws upon which both the other depends, and am sensible that your proceedings with me and some others on board are illegal and without a precedent, for no man by the law of Olerone is to be beaten for lying on shore, but his wages are to be deducted for the time, and what damages are sustained by his absence, he is to make good, neither is any man obliged to receive from a master of a merchant ship any more than one blow and retire, if the master p sue him he has liberty to defend himself, all commission relating to martiall or marine laws without instructions are void, and all Commissions relating to marine affairs which are not from the Commissioners of the Admiralty are void by a grant from their Majesties to them, during his Majesties continueng them in their office ” 73

The letter ends as follows —

“ Sr I humbly beg you to take this into consideration, for if this is not complied within three days, I will deliver you your keys of your chest and will act no longer as Chirurgeon of your ship, let the consequences of it be what it will ”

Regarding this letter, Crawford gives the following notes —

The punishment of ducking referred to as being next to that of death, is probably the old naval punishment of ‘ keelhauling,’ in which the victim was fastened to a rope carried from the ship’s yardarm on one side, underneath, to the other, and so dragged under the keel

FLOWERING

“ In Mr P. M. Malabar's book *Bombay in the Morning* (p. 263) is given a short Laws of Oleron. They were a code formed under the Dukes of Guienne in the 11th Century (The Black Book of the Admiralty, by Sir Travers Twiss, Vol II, p. 354). Cleriac says they were compiled by Eleanor of Aquitaine, mother of Richard I. They are said by some to have been the Laws of Wisby. The Hansas Laws of the Sea were collected into a code in 1495 and in 1614 ”

Captains of Indiamen were, indeed, invested with considerable power all on board. They had continually to face the possibility of Mutiny at the Bombay Consultation of 11th April, 1698, records the murder by his Captain Edgcomb on the voyage to China. These possibilities must be in mind in judging actions such as that of one Captain who, in 1818, arrived in India with a young Lieutenant who had been in irons for twenty-one days for that of whistling on the quarter-deck in the presence of the Captain, after he had been told to stop. It is interesting to learn that that piece of dictatorship cost the five thousand rupees.

One of the lesser crimes of Ship's Surgeons is recorded in an entry in the Journal of the voyage of Captain Blyth's fleet in 1625, where it is noted that on 15th Edward Bavinham, Purser, and Basil Hull, Surgeon of the *Lalcon*, were put in bilboes for getting drunk and refusing to attend prayers. Among their major perhaps the following from Sunsbury's "Calendar" is among the most curious.

“ Gerard Polman, a gem merchant, after traversing many countries in search of precious stones, in the year 1631 took a passage home on board an English East Indiaman from Persia, and had with him a large collection of gems and precious stones, collected during the previous years. On the homeward voyage Polman was poisoned by Abraham Porter, Surgeon of the ship, and his goods were divided among the crew. The crime becoming known parts of his estate ultimately came into the hands of the East India Company, of the Earl of Lindsey, to whom letters of administration were granted in behalf of the true heirs, and of others. A suit was filed for recovery of the property. Nothing is recorded as to the result ” 74

A large amount of information regarding the marine service in the eighteenth century is contained in Hardy's "Register of Ships Employed in the Service of the Honourable the United East India Company."

In the nineteenth century the service was more organised, and orders were passed on 23rd December, 1800, regarding the appointment of Surgeons of Indiamen.

“ Ordered, that no Person be permitted to proceed as Surgeon of any of the Company's Ships, who shall not have performed one Voyage in the Company's Service, as Surgeon's Mate, or acted Twelve Months in that Situation in His Majesty's Service, in a hot Climate, until the Persons before mentioned shall have obtained Births, with an Exception only in favour of such Persons, who during the Suspension of the standing Order before mentioned, have been permitted to proceed as Surgeons, without having performed a Voyage as Surgeon's Mate ”

“ Dr Hunter, examiner of Medical Journals, resides at No. 9, Charles Street, St. James' Square. Any Journal left with Mr Peypys, Cutler, No. 24, in the Poultry, will be forwarded to the Doctor's House ”

At that date the pay of a Ship's Surgeon was £3 per month in time of peace and £3 5s 0d in time of war. The pay of a Mate was £1 10s 0d and £2 10s 0d respectively. The head-money for the treatment of the Company's soldiers on the voyage was raised to 15s per man. By 1812 the pay of a Surgeon was revised to £5, and of a Mate to £3 10s 0d per month. A Surgeon, in 1800, received the following allowance of stores for the voyage: one puncheon of rum, fourteen dozen of other liquors, two firkins of butter, one cwt of cheese, one cwt of grocery and one case of pickles. A Surgeon's Mate was allowed twelve dozen of liquor, half a cwt of grocery, and of cheese, butter and pickles the same quantity as the Surgeon.

Whereas in the seventeenth century the Medical Department was sometimes recruited by the press-gang, by 1868 this procedure was discouraged.

"Impress of Surgeons Mates from the Co's Ships. Transmit orders from the Lords Commissioners of the Admiralty for the prevention thereof in future."

Pensions were established for the Marine Service as early as 1812, a Surgeon receiving £35 a year and a Mate £20. A Surgeon's widow received £25 and the widow of a Mate £20. Orphans of Surgeons received £5 a year, if their mother drew a pension, and £11 13s 4d if she did not. In order to qualify for these pensions only eight years was required, and officers contributed towards them.

In the early years the Company sent some ten to fifteen ships a year to India. By 1803 this number had risen to fifty-three. In time of war convoys were arranged. Some of these ships were the property of the Company but most were hired for the voyage or for several voyages. The largest of all the ships on the trade was the *Royal Charlotte*, of 1,252 tons, which made her first voyage on 11th August, 1796.

The Indiamen usually sailed from the Downs or from Portsmouth, though some set out from Torbay or Plymouth and a few from Falmouth and Bristol, but they all started originally from the Thames. From 1702 to 1812 the number of Indiamen lost, taken, etc., was 143 (about 20 per cent of the fleet). Of these 143, forty-two were taken, three were blown up, ten were burned, ten foundered, one was never heard of after sailing, and the remainder were merely entered as lost. On the 5th March, 1808, the *Lord Nelson*, 819 tons, sailed from Portsmouth, and on 28th October, 1808, in latitude 8° 30' South, and longitude 80° East, in the middle of the Indian Ocean she, along with the *Glory* and the *Experiment*, parted company in a great gale from the rest of the fleet on the homeward journey and none of the three were ever heard of again.

The official tale of the Marine Service is carried on in the nineteenth century by the India Office's "Marine Records, Miscellaneous." From all the above records it appears that about 1,200 Surgeons took Service in the Marine Branch during the years 1760 to 1833. It was common for Surgeons in the Marine Service, after a few voyages to be granted a commission in the land service and it appears that about 343 were given such an opportunity. During these years about 4,500 medical officers joined the land services. It was not unusual, even in those days, for newly-

qualified doctors to do one or two voyages in order to see the world
down in practice. It is interesting to find, in a list of deserters from ship
of Charles Key Bruce who, in addition to being a Surgeon, was also the
India of the newspaper the *Mirror*, and so added one more to the many non
activities of the L.M.S.

Certain members of the Marine Service afterwards attained success
fame. First among these was the famous African Explorer, Mungo Park
born at Selkirk in 1771, educated at Edinburgh, and served as Surgeon
on the Indiaman *Barcester* from 1792 to 1793. In May, 1795, he set out to
the sources of the Niger and disappeared for two and a half years. He
England again in 1797 and took a practice at Peebles. Apparently finding
in Scotland to be more onerous and exacting even than the exploration
he set out again for the Niger in January, 1805, and was last heard of on 17th Nov
of that year. His eldest son, also bearing the name of Mungo, was granted
mission in the Madras Medical Service in May, 1822, but came to an un-
timely end, dying of cholera at Trichinopoly in January, 1823.

In spite of all the hardships and difficulties of the Marine Service it is
to see that the scientific spirit existed even on board an Indiaman (Letter from
23rd December, 1778) —

Page 60. "Dr James Lind who is Surgeon of the *Atlas*, has been allowed at the request
of the Royal Society, to take with him sundry Instruments &c for making Improvement in
You are to assist him in those Pursuits, if not attended with any great expense to the Company

John Clark, who was born at Roxburgh in 1744, after studying divinity
Edinburgh, entered the Marine Service of the Company and served in it until 1781.
He became F.R.C.P. (Edinburgh) in 1785. After he retired from the Service
settled in practice at Newcastle, and founded the Newcastle Dispensary, which
afterwards developed into the Newcastle Infirmary, of which he became the Senior
Physician. He published, in 1792, his "Observations on the Diseases of Long
Voyages to Hot Countries, particularly the East Indies" based on his long experience
with the Marine Service.

Among the black sheep a prominent place must be found for Charles Maclean
who entered the Company's Marine Service about 1790. A Commercial letter from
Calcutta of 7th February, 1795, records that —

"Mr Machin, Surgeon of the *Houghton* reported by the Commander to be absent on
mustered the Crew previous to the dispatch of the Ship. Have directed search to be made for him
and ordered to proceed to England. Such conduct shall meet with no indulgence."

Three years later, however, he was still in Calcutta, and only apprehended
and deported at the end of that year, *vide* a Law letter from Calcutta dated 29th
September, 1798 —

"Mr Charles Maclean. A letter having appeared in a Newspaper under his Signature, animad-
verting on the conduct of Mr Jacob Rider in his official capacity as Judge and Magistrate, also a

Letter in the same paper under a fictitious Signature, The Editor and Mr Maclean were called on, to apologize for their conduct, which the former immediately did, but Mr Maclean positively refused. Considerg Mr Maclean's Conduct highly indecent and disrespectful, and it appearing that he was in India without License, having left his Ship to which he belonged, and had been ordered to be sent to Europe whenever he could be apprehended, he is therefore sent to Europe as a Charterparty (steerage) passenger on the *Busbridge*."

In 1800 we find MacLean obtaining the degree of M D at Aberdeen and, in 1804, joining the Army Medical Department. Old habits were strong, however, for he left that Service without leave and was advertised in the *Hue and Cry* as a deserter. Action does not seem to have been taken against him as, in 1809, he was appointed Lecturer to the Company on the Diseases of Hot Climates, and reappointed in 1818. He died in 1824.

Per contra we find several exceedingly brilliant doctors adorning, even though only for a short while, the Marine Service of the Company. Among these mention should be made of Neil Arnott, James Spence, the distinguished traveller and author Francis Buchanan Hamilton, William Charles Maclean and Alexander Grant.

Neil Arnott, after two voyages to China as Surgeon of the *Surat Castle*, 1807-12, settled in London and became, in 1816, Physician to the French, and later to the Spanish, Embassy. He was the inventor of the Water Bed. An original member of the Senate of the University of London, Physician Extraordinary to the Queen in 1838, and a member of the General Medical Council in 1858, he received the Rumford Medal of the Royal Society and the Legion of Honour, with a gold medal, at the Paris Exhibition. He was the author of "The Elements of Physics," in 1827, which ran through seven editions and was translated into French, German, Dutch and Spanish. He died in 1874.

James Spence also made only two voyages on Indiamen (1833-34). Settling in Edinburgh, he became Assistant Surgeon at the Royal Infirmary in 1850, and Professor of Surgery in 1864, President of the Royal College of Surgeons in 1867, and Surgeon-in-ordinary to the Queen in Scotland in 1868. He died in 1882.

William Charles Maclean, after two voyages in 1833-35, transferred to the Madras Service and, after serving in the China War of 1840-43, became Presidency Surgeon at Hyderabad. He was subsequently appointed Professor of Military Medicine at Netley and died in 1898.

Alexander Grant made one voyage to Madras, Calcutta and China as Surgeon to the Indiaman *Thames*, 1838-40, and then entered the Bengal Service. He was, in 1849, appointed Medical Officer to the Governor-General, Lord Dalhousie, and served in that capacity until Dalhousie left India in 1856. He was appointed Superintendent of the Calcutta General Hospital in that year and, in January, 1857, became Apothecary-General or Chief Medical Storekeeper. On leaving India in 1861 he was appointed Honorary Surgeon to the Queen, retired in 1863 and died in January, 1900. A sympathetic and interesting study of his life was written by Dr. George Smith in 1902 under the title "Physician and Friend."

Mention must also be made of Joseph Hume, who served as Surgeon to an Indiaman from 1797 to 1799, and afterwards transferred to the Bengal Service. He was able to retire in February, 1808, with a fortune of £40,000 said to have been made out of Army contracts. He was subsequently elected M.P. for Weymouth and various other constituencies.

It is interesting that the well-known firm of publishers Thacker and Spink, of Calcutta, was founded in 1819 by William Thacker, who had been Surgeon of the *Earl St Vincent* from 1810-11.

Possibly the most remarkable career of any medical officer in the Sea Service was that of Sir Robert Mac Ara, K.C.B., who, while serving as Surgeon of several Indiamen, at the same time held a combatant commission in the British Army. Though the first twenty-one years of his service were nominal, Mac Ara was gazetted in 1803 Captain in the 42nd Foot, the Royal Highlanders, or Black Watch, and his military career properly began. He saw hard service with his regiment in the Peninsula and elsewhere, and eventually fell at Quatre Bras on 16th June, 1815 "commanding one of the finest regiments in the British Army in the greatest campaign in which that army had ever been engaged previous to 1914."

It is strange to think that the merest accident prevented the poet Keats from taking service under the Company. In 1820 the fear of poverty, the onset of tuberculosis and the unfavourable reception of his work by the public had made him search desperately for some alternative way of life. His early training as a doctor offered the obvious choice and a letter exists in Houghton's life of the poet which contains this extract:

"I have my choice of three things, or, at least, two,—South America, or surgeon to an Indiaman, which last I think will be my fate. I shall resolve in a few days."

In 1833 the trade of the Company was abolished, their fleet was sold and compensation given to all the officers who were thus thrown out of employment, each Surgeon receiving as his share £900.

Reference has already been made to the early beginnings of the Indian Navy in 1612, when Captain Best defeated the Portuguese fleet in a naval battle off Surat. When the Company took over the lease of Bombay from the Crown in 1668, their headquarters were moved from Surat to Bombay and the fleet was established there as the Bombay Marine. The ships all carried Surgeons, but no medical officer of higher rank than that of Assistant Surgeon served in the Navy. The pay was fair but the service was not popular.

During the eighteenth century a few of the junior officers of the Bengal Service were sometimes employed afloat, but from 1800 onwards the Medical Officers of the Indian Navy were supplied entirely from the Bombay Service. Rules for the supply of doctors for duty on ships of the Indian Navy were laid down in a Bombay General Order of the 13th May, 1836 —

"Bombay Castle, May 13, 1836. The Right Hon. the Governor in Council is pleased to

establish the following regulations for the appointment of medical officers to the Indian Navy branch of the service

“ 1st Assistant Surgeons shall perform three years duty on shore previous to being nominated to the Indian Navy

“ 2nd The junior, after three years service, shall be ordered to the Presidency, ‘ in waiting ’ as next for duty, the next in succession taking his place at Bombay as soon as he is embarked

“ 3rd Each Assistant Surgeon shall perform two years duty afloat, if during that period, he is relieved, owing to ill health, he shall bring up the period of absence, and be the first for duty after his recovery

“ 4th It will be the duty of the Medical Board to recommend arrangements to Government to obviate any delay in the reliefs

“ 5th An Assistant Surgeon, desirous of extending his naval service beyond the period specified, will be allowed to do so

“ 6th The Right Hon the Governor in Council is also pleased to resolve, that simultaneously with the introduction of the foregoing rules a consolidated medical allowance of Rs 100 per mensem for each ship shall be granted in lieu of the sums at present drawn as head-money and allowance for petty stores by Assistant Surgeons in the Indian Navy ”

These rules underwent certain modifications later and the post of Medical Officer on the smaller ships came to be filled by members of the subordinate Medical Service. When the Indian Navy was abolished in 1863 after the Government of India had passed to the Crown, its place was taken by the Bombay and Bengal Marine Services, and these in their turn were united to form the Royal Indian Marine. The I M S gradually ceased to supply officers for this Service until, eventually, the only commissioned medical officer was the Surgeon and Naturalist on the R I M S S *Investigator*, the survey ship of the Royal Indian Marine.

One aspect of life in the Sea Services remains to be mentioned—the constant fear of those pirates who have, from time immemorial, flourished in the Eastern seas and who, indeed, pursued their profitable calling well into the nineteenth century. In addition to the Malay proas and Chinese junks which were normally to be faced in those regions, the frequent appearance of European pirates added fresh horror to the existence of an unarmed merchantman. The European pirates who ventured so far afield were not, however, the equals of Blackbeard and the other terrors of the Spanish Main. They seldom took life except in fair fight and did not usually scuttle the vessels they captured. Neither did the passengers or crew usually have to walk the plank.

There are numerous references to complaints being made against the outrages of pirates. In 1655 the accusation was made that William Cobb, of the *Samaritan*, and William Ayres, of the *Roebuck*, were committing piracies under license from the King of England, on vessels owned by Musalmans, though it was stated that they had not attacked the Company's ships. Proceedings were taken and dragged on for years. Finally, on the testimony of Surgeon Glover of the *Roebuck* that he had been forced into the business against his will, and on his giving a bond of £1,000 not to go to India again without the Company's consent, the suit against Ayres was dropped.

It is interesting to note that all these pirate ships appear to have carried surgeons of their own. An account survives of the pirate ship *Batchelor's Delight* (1688) given by the Surgeon on it, an Irishman, H Coppinger ("Factory Records, Fort St George," Vol V, 1688), while another Buccaneer Surgeon, Lionel Wafer, published his experiences in "A New Voyage and Description of the Isthmus of America," in London in 1699. One man is on record, though he had nothing to do with the I M S, or even with India, who combined the practice of piracy with that of medicine so skillfully that he was able to achieve considerable success in both professions. That man, one is surprised to learn, was Thomas Dover, whose name was, in our fathers' time, almost a household word on account of his powder—*Pulvis Ipecacuanhae Compositus*. In his early years Dover had studied under the illustrious Sydenham and obtained the M D of Cambridge in 1684, before setting up in practice at Bristol. What strange spirit moved within him we do not know but, in 1708, he sailed as Second-in-Command of a privateering expedition around the world in the *Duke and Duchess*, with Captain Woodes Rogers in Command. He himself was in command of the *Duke*, and the expedition carried six surgeons. The story continues in Crawford's words —

"In April, 1709, the expedition captured and plundered Guyaquil. The sailors slept in the churches of the town and were much annoyed by the smell of dead bodies buried therein, victims of a recent epidemic of plague. The disease broke out among the crews, 180 being attacked, Dover ordered them all to be bled to one hundred ounces each, and given dilute sulphuric acid to drink, this treatment is said to have been so successful that only eight died. The expedition reached England, by the Cape of Good Hope, in 1711, Dover commanding a Spanish prize. On 30th September 1721, he took the diploma of L R C P, London, settled in practice in London, and died in Arundel street, Strand, in 1742. Dover may be said to have had a share in the origin of a great English classic, for during this expedition, on 2nd February 1709, Woodes Rogers took off the island of Juan Fernandez Alexander Selkirk, who had spent over four years on the island after a shipwreck, and upon whose adventures Defoe founded *Robinson Crusoe*" 75

The best known of the major pirates who visited Eastern waters was the famous Captain Kidd. Several references appeared regarding him during 1696-98. On 4th April, 1698, it is recorded that he seized the *Quedah Merchant* under pretence of orders from the King of England. Kidd had indeed been given command of the *Adventure*, and sailed from Plymouth in May, 1696 for Madagascar with orders to eradicate piracy in the East, but he joined the pirates whom he was sent to suppress. In July, 1699, he returned to Boston in his prize the *Quedah Merchant* and was thrown into jail. He admitted piracy but pled that he had been deposed and confined in his cabin by mutineers, and that the *Quedah Merchant*, sailing under French colours, was a lawful prize. He was, however, found guilty and, with several of his companions, was hanged at Execution Dock on 23rd May, 1701. European piracy in Eastern waters died out about the middle of the eighteenth century.

Lesser pirates of Indian origin were troublesome to the Company's shipping in the seventeenth century. They had their headquarters some distance down the Coast from Bombay—at Gheria (Vijayadrug) a fort which was finally captured in 1755. Clive figured conspicuously in that operation.

1858—THE CROWN TAKES OVER THE GOVERNMENT OF INDIA

In February, 1856, shortly before he left India, the great Governor-General, Lord Dalhousie, put forward in a long and elaborate minute his views regarding necessary improvements in the Indian Medical Service. This is a most interesting and important document. Smith, in his life of Alexander Grant, who was personal Physician to Lord Dalhousie, states that the minute was forwarded as a paper which was drawn up by Grant. The original minute in the handwriting of Lord Dalhousie is preserved in the Calcutta Record Office.

Lord Dalhousie put up an eloquent plea for the granting of substantive rank to officers of the I M S, which rank was not however conferred for more than forty years—actually in 1898.

“ But the most galling, the most unmeaning, and purposeless regulation by which a sense of inferiority is imposed upon medical officers, is by the refusal to them of substantive rank ”

“ The Surgeon and Assistant Surgeon rank nominally with the Captain and Lieutenant, but the rank is only nominal. Wherever medical officers and others are brought together on public duty the former has no rank at all, and the oldest Surgeon on the list must in such case range himself below the youngest Ensign last posted to a Corps ”

“ It is impossible to conceive how such a system as this could have been maintained so long on the strength of no better argument than that ‘ it has been, therefore it ought to be ’ ”

“ It is impossible to imagine what serious justification can be offered for a system which, in respect of external position, postpones service to inexperience, learning to ignorance, age to youth, a system which gives a Subaltern who is hardly free from his drill precedence over his elder who, perhaps, has served through every campaign for thirty years, a system which treats a member of a learned profession, a man of ability, skill, and experience, as inferior in position to a Cornet of Cavalry, just entering on the study of the Pay and Audit regulations, a system in fine which thrusts down grey-headed veterans below beardless boys ” 76

The conclusion of the minute gives the suggestions which it contained —

“ I will now close this minute by recapitulating the several suggestions and recommendations which have been made therein, regarding the Medical Service of the East India Company

“ I. That the several Medical Boards should be abolished

“ II. That the control and management of the medical department in each Presidency should be placed in the hands of a single officer, who shall be called the Director General. That this officer should be selected from among the Superintending Surgeons, or Staff Surgeons, and that his tenure of office should be for five years

“ III. That the Director General should be assisted by two officers, to be called the Inspector General of Military Hospitals, and the Inspector General of Civil Hospitals and dispensaries, and that they should be selected in the same manner as the Director General

“ IV. That the Superintending Surgeons should henceforth be appointed invariably by selection, and by seniority

while, Sir James Outram had added his voice to that of Lord Dalhousie, but this time the voice was that of a soldier speaking in the language of a soldier, rather than the smooth phrases of a Governor-General giving respectful advice to the Honourable Court —

“ There is one class of officers in respect of whom I would fain make a special appeal on this score, as they are a class which, to our disgrace be it said, has been treated with singular harshness and illiberality alike by their military and civil superiors. I allude to the officers of the Medical Department, a body of men who not only are unsurpassed by any other body in the Service for professional zeal and skill, gallantry and devotion to their duties, but have especially distinguished themselves by the success with which they have cultivated general science, and the earnestness with which they have applied themselves to the promotion of education and other philanthropic objects. These men, especially those of the Bombay establishment, have been treated by us with such unfairness that a late Physician General of that Presidency, a man whose name is held in honour both in and out of his profession—I allude to Dr McLaren—felt himself authorized to assure the late Lord Frederick Fitz-Clarence that, had any officer treated his dogboy in the manner in which the Court of Directors and Board of Control have treated the Medical Service he would have been brought to a Court-Martial, and cashiered for dishonourable breach of faith. The Physician General's illustration was a strong one, but after explanation, its justice was admitted by that Commander-in-Chief, who thenceforth felt as warmly on the subject as the head of the Medical Department ” 77

And in an appendix to this minute —

“ The boons I crave for the Medical Service are, in my opinion, but a small instalment of what is due to a body of highly-educated and accomplished English gentlemen, distinguished for their devotion to their duty, their philanthropic zeal, and their high moral character—a body of men to whom almost every member of the Civil and Military Service is indebted for his own life saved, or his health restored, or for like blessings bestowed on those most near and dear to him. I regard our treatment of the Indian Medical Service as regards its ‘ relative rank,’ its pay rules, the distribution to it of honours, and its exclusion from the Political and Administrative Department, as unworthy alike of our age and nation. But in now proposing to open freely to that body, the Civil, Political and Miscellaneous offices of the State, I do so exclusively on consideration of State policy ” 78

Sir James followed this by an eloquent plea for the employment of medical officers on civil executive duties.

During the closed period of 1860–64 officers of the I M S and A M D relieved each other indiscriminately of charges with British and Native troops, and of civil surgeoncies. It was taken as settled that the two services would be amalgamated, and schemes were even put forward by which the I M S would be swallowed whole by the sister service, provisions even being made for the future of all existing officers of the I M S in that eventuality. Those dreams and schemes were, however, put an end to by the I M S Warrant of 7th November, 1864, which finally negatived the proposals for amalgamation.

In that Warrant, para 8 stated that a proposal had been put forward to replace the I M S by a Medical Staff Corps, for service in India, recruited by volunteers from the A M D. This proposal was defeated by two votes in the House of Commons. The opinion of Crawford, who was nearly forty years nearer to those events than ourselves, is worth recording —

“ The formation of such a Medical Staff Corps, in place of the I M S , or, in other words, the future recruitment of the I M S altogether by volunteers from the A M D , would probably have been the best solution of the problem, both for India and for the Service . It would have brought the Medical Service into line with the Indian Staff Corps, as regards the manner of its recruiting, and would have officered the I M S with men who had already served in the A M D , and who volunteered for continuous service in India with a knowledge of what they undertook, and of the special advantages and disadvantages of such service . But there were two great objections to this proposal, one from the Indian, and one from the British point of view, objections which proved insuperable, when amalgamation was again under consideration in 1880-1 . Admission to the A M D being restricted to men of unmixed European extraction, such a system of recruitment would have debarred natives of India from entering the Service . Admission to the I M S had been thrown open, ten years before, to all British subjects, without distinction of race, and some natives of India had already entered the I M S and were serving therein with credit . The Indian Government could not consent to the complete exclusion of Indians from the Service in future . And, on the other hand, under such a system of recruitment by volunteers from the A M D , the superior attractions of the I M S would have drawn off the majority of the more energetic and ambitious members of the British Service, a result which would have been most unsatisfactory to the British Army ” 79

The chief changes brought into force by the Warrant of 1864 were as follows —

“ Paras 17-20, Strength of the I M S (861) to be diminished

Paras 22, 23, Promotion to Surgeon to be made on completion of twelve years' service

Para 27, All executive appointments to be tenable equally by officers of all executive ranks

Para 31, Limitation of tenure of office of D I G to five years

Para 35, Grant of increased pensions

Paras 36, 37, Grant of higher pensions to I G 's and D I G 's

Para 44, Royal commissions conferred on all officers of I M S ” 80

The whole of this most important document may be consulted in Crawford's History, or in the *Lancet* for the 26th November, 1864 . The step in promotion to Surgeon after twelve years' service affected no less than fifty-eight officers, and ensured a steady flow of promotion for the future . The pay fixed in the Warrant gave an increase all round, and the new pensions, also, showed a considerable advance on those formerly in force .

After the issue of this Warrant the I M S was again thrown open to competition, the commissions of the candidates who passed the first examination being dated the 1st April, 1865 . The first of the new entrants was Kenneth McLeod, who afterwards became Professor of Surgery at Calcutta, and later of Military Medicine in the Army Medical School at Netley . The second was Cleghorn, who became Director-General in 1895, and the third was Harvey who succeeded Cleghorn in 1898 .

The appointment of natives of India as Commissioned Officers in the Medical Service was strictly forbidden by the Court, and it was not until the introduction of competitive examinations in 1855 that admission had been thrown open to Indians . There were, however, isolated cases in which Anglo-Indians had been admitted . We find, for example, the following —

“ Standing orders of Company respecting Natives of India dispensed with in favour of Mr Richardson, the 1st February 1792 ”

The first of the rules for competition published in 1854 defined that appointments were to be thrown open to “ all natural-born subjects of Her Majesty ” The first examination was held in January, 1855, and second on the list of successful candidates was S C G Chuckerbutty, a Bengali student who had been to England, and later served as an Uncovenanted Medical Officer from 1850-54 Dr Chuckerbutty filled with distinction the posts of Professor of Materia Medica at Calcutta, and Second Physician to the Medical College He was succeeded by Dr Chandra (The examination lists were headed by an Indian again in July, 1910, and in July, 1913) At the time of temporary closure of the I M S in 1860, only three Indians had succeeded in entering—Chuckerbutty, R C. Chandra and Rustomjee Byramjee, who was the first Parsi to gain admission The number of Indians who had entered the Service between January, 1855, and August, 1913, was 109

The Rules for admission to the I M S published by the India Office in May, 1910, stated that “ Candidates must be natural-born subjects of His Majesty, of European or East Indian descent ” This did not affect the admission of Indians, but closed the door to Malays, Arabs, Chinese, etc At the same time it opened it to Colonists of European descent, such as French from Canada, and Dutch from South Africa

The rules issued for the examination of 1865 when the Service was reopened did not differ greatly from those of ten years before The most important change was the institution of a course in Military Hygiene, Medicine and Surgery, of at least four months, at Netley After 1865 little alteration was made in the Regulations for admission

There have been, since the end of the eighteenth century, instances of European medical men who were not members of the Company's regular Medical Service practising in India, and sometimes holding office under Government There was, for example, the case of Dr Rowland Jackson, who possessed the qualification of M R C P He was granted permission to practise in Bengal in 1778 and, in view of the fact that physicians at that time still tended to consider themselves as belonging to a higher order of humanity than surgeons he applied, soon after his arrival, for employment as Physician to the Company and Inspector of the Company's hospitals, on the grounds that all the Company's medical officers were merely Surgeons This, as may be imagined, produced a first-class disturbance A compromise was arrived at by which Dr Jackson was appointed “ Medical Attendant to the Civil and Military Servants of the Company, when called upon ” at a salary of Rs 600/- a month and Rs 200 - house rent He was subsequently appointed Physician to the Jail, and died in Calcutta in March, 1784

It was not, however, until the second quarter of the nineteenth century that a regular Uncovenanted Medical Service came into existence This was largely due to the fact that the Medical Service was always kept at its lowest strength, with no

say that I do not see how matters could be worse except in a community which drew no distinction between its cesspools and water-tanks, and used each indiscriminately for all purposes ”

In a later section of this work we shall see how the Service attempted to cope with this literally Herculean labour. Meanwhile, in 1880, for the first time, the Surgeon-General with the Government of Bengal, who was also head of the Indian Medical Service, bore the collateral title of Sanitary Commissioner with the Government of India

THE PERIOD 1865 TO 1896

ADMINISTRATIVE CHANGES This period of thirty-one years marks the final stage in the history of the old I M S with its three establishments for Bengal, Madras and Bombay, which came to an end on 29th July, 1896, when the last appointments were made to those establishments. Many important events took place during this period. The rank of Assistant Surgeon was abolished in 1873, the administrative titles of Inspector-General and Deputy Inspector-General were changed to Surgeon-General and Deputy Surgeon-General, the rank of Lieutenant for Junior Surgeons was abolished in 1880, in that year closer relations were introduced between the A M D and the military side of the I M S, so close that there was practically amalgamation in the administrative grades, military command in hospitals was granted in 1889, and in 1891 compound titles, including that of Surgeon-Lieutenant, were introduced.

In 1867 the appointments of Presidency Surgeons were abolished, though the officers holding certain Professorships still carried out the duties, and even sometimes maintained the name. It was in 1868 that the executive charge of district jails was handed over to Civil Surgeons in addition to the medical duties which they had always performed in the jails. A marked improvement in administration resulted from this change. In the same year (1868) new furlough rules were introduced for the Service. These were modified and improved again in 1875 and 1886. Those who are curious in such matters may find, in Crawford's History, full details and extracts from these rules. It was in the leave rules of 1886 that the principle was laid down that an officer on leave, or on furlough, must rejoin at once on being recalled to duty.

In 1870 admission to the Service was again closed for two years, from 1st April, 1870, to 30th March, 1872. As has been mentioned above, in 1873 the rank of Assistant Surgeon was abolished, and the titles of Surgeon-General and Deputy Surgeon-General introduced in place of Inspector-General and Deputy Inspector-General. The other two grades of the Service were Surgeon-Major, after twelve years' service, and Surgeon. The relative army ranks were Brig-General, Lieutenant Colonel, Major and Lieutenant respectively but, after six years' service, a Surgeon

ranked as a Captain, after twenty years total service a Surgeon-Major ranked as a Lieut.-Colonel, after five years in his grade a Deputy Surgeon-General became a Colonel, and a Surgeon-General, after three years' service as such, or with an army in the field, held the relative rank of Major-General.

In 1876 the rank of Major-General was given to Surgeons-General from the date of their appointment, and in 1879 Deputy Surgeons-General with the local rank and title of Surgeon-General were appointed for Bengal, the United Provinces and the Panjab.

In 1879-80 the question of the amalgamation of the I.M.S. with the A.M.D. was again the subject of long and deliberate consideration. A precis of the proposals was given in the *Lancet* of 22nd October, 1881—

“(1) The whole of the I.M.S. to be united with the A.M.D. into one Imperial Service, to be styled the Royal Medical Service.

“(2) Officers of the present Indian Service to be eligible for service elsewhere, but not out of India except at their own request.

“(3) All new appointments to be made to the Royal Service, so as to maintain the whole Medical Service at its full strength.

“(4) Officers to be eligible for civil situations, but to return to military employment, as a rule, after five years in Civil employ.

“(5) One staff to be formed for the medical duties of all India, to be composed of officers of both services, and to be equal in strength to the present Indian Medical Staff.

“(6) All medical officers of the Indian Service to have the option of Indian or British retiring allowances, but this in no way to interfere with the claim to retiring allowances from the medical funds.”

The Government in England had appointed a Commission on Reorganisation, but were not satisfied with the findings as regards reform of the Medical Services in India, even though they held “that the needful improvement, both economical and administrative, is to be found only in some measure of unification.” They, therefore, invited Dr. Crawford, Surgeon-General in the A.M.D. and Dr. Cunningham, Surgeon-General with the Government of India, to prepare a memorandum on the subject. Those officers made certain proposals which, however, did not satisfy the British side because it was feared that the superior attraction of Indian Service would draw off the best men, nor the Indian, because Indians would be prevented from joining the proposed amalgamated service.

The result was, as is usual in such cases, a compromise, issued in a Government General Order of 2nd January, 1880, as “Changes in the Organisation of the Medical Administrative Staff of the Army in India.” That document defined that, from 31st March, 1880, the British Army Medical Department and the Indian Medical Department would form one department for the medical administration of the Army in the three Presidencies. The administrative duties were shared out between the two services in more or less equal proportions. Regarding the posts of Surgeon-General of the three Armies, it was defined that, though they would ordinarily be taken from the A.M.D., the Government of India reserved to themselves the power to appoint specially qualified officers of either service. In actual fact, during

the fifteen years that this scheme was in operation, no officer of the I M S was ever appointed to one of these posts

There followed, also, a reorganisation of the Civil Administrative Medical appointments in India under a Home Department Notification of 15th March, 1880. It was, among other changes, laid down that the Surgeons-General with the Government of India and with the Governments of Madras and Bombay would, in addition to performing their Civil Administrative duties, be heads of the Indian Medical Department in their respective Presidencies. It was again stressed that, though the administration of the Service was divided into two branches—Civil and Military—Medical officers would remain Military officers, those in Civil employ being only lent to the Civil Department and liable to be called on for military duty if and when required.

In 1879, as recruitment to the A M D had almost ceased under the conditions then existing, a new Royal Warrant was issued giving improved terms to that Service. These improved terms were extended to the I M S by a Royal Warrant of 16th November, 1880. Crawford, while giving the Warrant in full, makes the following comment—

“ Under this Warrant the examination for promotion was abolished by omission, (clause 4), the rank of Brigade Surgeon was introduced, with effect from 27th November, 1879, the date on which this new rank had been given to the A M D, and the rank of Captain was bestowed on newly appointed Surgeons from date of commission. This last change was found to be a mistake, and was very unpopular with the Army in general. Senior subalterns, of six to twelve years' service, many of whom had seen much active service, were naturally aggrieved at finding newly joined medical officers made their seniors in rank. Ten years later, the rank of Lieutenant was again introduced, both in the A M D and in the I M S, for medical officers under three years' service. What would probably have been the fairest treatment, as regards rank, to all concerned would have been to have given to medical officers, who usually enter the Army from four to eight years older than subalterns, the rank of Lieutenant on first joining but with five or six years' seniority in that rank and to have assimilated their future promotion to that of the Indian Staff Corps, giving each step at the same length of service as in the Staff Corps, with the advantage to the Medical Department of the extra years of service, as suggested, on entry ” 81

In 1881 the system of Station Hospitals for British troops in India was introduced in place of the existing regimental hospitals, but in the Indian Army the older system lingered on for some time. The regimental hospital system was popular with the troops and with junior officers, but had the great defect that a Lieut-Colonel was doing the same work, with the same responsibilities, as he did soon after he joined the Service as a Lieutenant.

In 1882 some thirty regiments of the Indian Army were disbanded and, consequently, an equivalent number of Medical Officers were thrown out of employment. Considerable hardships were experienced by junior officers who were squeezed out in the placing of those officers who were thus compulsorily unemployed. They found themselves on unemployed pay of Rs. 286/10 - per month and, though willing and eager to be employed, were compelled to be idle. They memorialised the Government and the case was brought up in the House of Commons, with the result that unemployed pay was raised to Rs. 317 and later to Rs. 350 -. About that time

the abbreviation I M D which had, for some years, been used for the I M S , presumably on the analogy of the A M D , was dropped, and the correct abbreviation I M S came into general use The abbreviation I M D had never been correct, for the I M S had always been a Service and never a Department

In July, 1886, a fresh notification issued regarding civil administrative appointments in the I M S but no great change was involved

On the 30th April, 1887, a new Royal Warrant was issued, revising the rules for promotion and precedence in the I M S The Warrants of 1880 and 1881 were thereby cancelled Actually the new Warrant differed very little from that of 1880 A further Warrant of 8th February, 1889, gave the power of command in military hospitals to officers of the I M S

In 1890 orders were issued by the Government of India under which all officers entering the I M S after that date were liable to be recalled from the pension list to duty up to the age of fifty-five

A further Royal Warrant of 10th August, 1891, introduced a general system of compound titles with the word " Surgeon " combined with the appropriate Army rank These cumbrous titles were not popular, especially that of Brigade-Surgeon-Lieut -Colonel, and this rule only remained in force for seven years

From the 1st April, 1895, the three separate armies of the three Presidencies were abolished, and the whole combined into one force—the Indian Army This Army was divided into four Commands, or Army Corps The Panjab, Bengal, Madras and Bombay This necessitated a corresponding distribution of Principal Medical Officers, which was defined in Clause 35, I A C , 1895

" To each of the four commands a Principal Medical Officer will be appointed, two will be taken from the Army Medical Staff, and two from the Indian Medical Service Officers of either service will be eligible for any Command, but for either the Bengal or the Panjab Command a Principal Medical Officer belonging to the Indian Medical Service will ordinarily be nominated

" 2 The districts of Medical Superintendence of Surgeon-Colonels will be distributed as follows —

	Army Medical Staff	Indian Medical Service
Panjab Command	Rawal Pindi Sirhind	Lahore Panjab Frontier Force
Bengal Command	Allahabad and Nerbudda Meerut and Bundelkand Oudh and Rohilkand	Assam Presidency
Madras Command	Secunderabad and Belgaum Mandalay and Chin Hills	Bangalore and Southern Rangoon Madras
Bombay Command	Poona Mhow and Deesa Quetta	Bombay Karachi Kampti

“ 3 The administrative medical charge of the Peshawar District will be held alternately by a Brigade Surgeon Lieutenant Colonel of the Army Medical Staff and of the Indian Medical Service ”

The salary of the Principal Medical Officer of each command was fixed at Rs 2,200 and he received the rank of Major-General

The Royal Warrant of 21st October, 1895, allowed for exchanges and transfers between officers of the I M S and the Army Medical Staff, below the rank of Surgeon-Major and with less than seven years' service

The last Medical Officer of John Company, William Roche Rice, retired on 29th March, 1895 Born in January, 1833, he took the degree of M D in the Queen's University of Ireland and entered the Bengal Service in November, 1856 He rose to be Surgeon-General with the Government of India in March, 1890. During the Mutiny he served at Indore He was appointed Honorary Physician to the Queen in 1896 and died in March, 1903

OTHER ACTIVITIES The century under review was one of the most significant in the history of medicine We have referred to the experiments by Sir James Simpson and others in anæsthesia in 1846 and 1847 Contemporary was the initial work of Ignaz Semmelweis on the causation of puerperal fever, though it was not until 1861 that he published the final report on his recommendations and, being driven from the hospital at Vienna, was hounded into an asylum by his less forward-minded colleagues, true inheritors of the tradition of Galen It was in August, 1865, that Joseph Lister introduced the principles of antiseptics to the world by the employment for the first time of his carbolic spray in a case of compound fracture of the leg in Glasgow Infirmary It was the brilliant and truly hippocratic researches of these men, combined with the introduction about that time by Thomas Spencer Wells of the catch forceps for the control of bleeding, that enabled surgery to take that enormous leap forward during the next sixty years which permitted Sir Berkeley Moynihan, one of the greatest, and certainly one of the most successful, surgeons of a brilliant fellowship to announce “ *urbi et orbi* ” (September, 1930), in his opening address at one of the greater London Medical Schools, that now all regions of the body were accessible to the surgeon, that the art had reached a point where further progress was unlikely, and that any fresh advances could only be in matters of detail

In the field of Bacteriology, the epoch-making work of Louis Pasteur (1885), and later of Robert Koch and Paul Ehrlich opened out fields for investigation which may lead no man can say whither Such great advances inevitably had repercussions on the profession as a whole Except for isolated instances the many-sided “ characters ” of the previous age are no longer found in the I M S Men no longer came to the East, moved solely by the spirit of adventure or by a desire to make their fortunes The individual became merged in the Service which, in consequence, increased in stature and in prestige New channels opened up—Research, Public Health, Medical Education—and many men entered one or other of those departments and gave to them the whole of their service There were, of course, always those who preferred the normal professional career of Civil Surgeon and Consultant and for

such men the employment of increasing developments of technique and advances in treatment absorbed all the energies of a busy life.

It is proposed, therefore, that for the remainder of this story the continuity of administrative detail shall be maintained as giving the necessary background to events, and that this shall be enlivened here and there by sketches of a few individual careers and episodes, but that the study of the development of Research, Public Health and Medical Education during these years shall be reserved until a summing up of each is made towards the end of the narrative.

It has been mentioned earlier in these pages that in October, 1864, the Medical Board of the India Office was established and Sir James Ranald Martin was appointed as Physician to the Secretary of State for India. Other men who achieved subsequent fame after retirement include Frederick John Mount, who was one of the original Fellows of the Royal College of Surgeons of London in 1844. He was, in 1857, deputed to the Andaman Islands to choose a site for the convict settlement there, an expedition which resulted in the foundation of Port Blair. In a fight with the Andaminese he was wounded in the mouth and had two ribs broken. After his retirement, in 1874, he was appointed as one of the Medical Inspectors of the Local Government Board in England, and held that office for thirteen years. During that time, in November, 1876, he had the interesting experience of attending the removal of the pavement of the Church of St. Peter ad Vincula in the Tower of London which was necessitated by restorations to that Church. Under the pavement had been buried Queen Anne Bolcyn, and Lady Rochford, executed by order of Henry VIII, the Duke of Somerset, Lord Protector, beheaded under Edward VI, the Duke of Northumberland, father-in-law of Lady Jane Grey, executed under Queen Mary, and James, Duke of Monmouth, the son of Charles II. The skeletons of all the above were found and identified.

Charles Murchison, who entered the I.M.S. as an Assistant Surgeon in April, 1853, acted as Professor of Chemistry, Calcutta, for a few months and then served in Burma. He resigned in October, 1855, and set up in practice in London. He held appointments in turn as Physician at the Westminster, St. Mary's, King's College, Middlesex, London Fever and, finally, at St. Thomas's Hospital. He was elected F.R.S. in 1866 and LL.D. of Edinburgh in 1870. He was also Physician to F.R.H. the Duke and Duchess of Connaught.

Nottidge Charles Macnamara, who entered the Bengal Service in 1854, retired in 1876, having held the chair of Ophthalmic Surgery in Calcutta for thirteen years. He became Consulting Surgeon to the Westminster Ophthalmic Hospital and sat on the Council of the Royal College of Surgeons, becoming Vice-President in 1893 and 1896.

William Wotherspoon Ireland, a descendant of John Knox, through the Reformer's daughter, Mrs. Welsh, was educated at Edinburgh, and took the unusual degree of M.D. of Paris. He entered the Service in August, 1856 and served in the Mutiny at the siege of Delhi, where he was shot through the head and returned as

killed on 26th July, 1857 His injuries were described in the *Lancet* of 7th November of that year —

“ A ball had entered the eye, and passed below the brain, coming out near the ear. . . He had a second wound, though of a less serious character, a ball having entered the shoulder, which was found lodged in his back ”

He went on three years' sick leave but did not recover sufficiently to rejoin the Service After retirement he became Superintendent of the Scottish National Institution for Imbecile Children at Larbert He died in May, 1909, more than fifty years after having been officially returned as killed in action He published, in 1890, what Crawford considers to have been the best novel written by any member of the I M S —“ Golden Bullets, a story of the days of Akbar and Elizabeth ”

William Smoult Playfair served in the Bengal Service from 1857 to 1864, including service during the Mutiny He was appointed as Lecturer on Obstetrics at King's College Hospital, London, in 1863, and became Physician to that Hospital from 1873 to 1898 His book—“ A Treatise on the Science and Practice of Midwifery ”—passed through nine editions in twenty years and was, during that time, the most popular work on that subject

Sir Peter Freyer, who during his career in the Service earned fame by his work on Litholapaxy, continued to distinguish himself after his retirement in 1897 by developing, when Surgeon to St Peter's Hospital, London, his operation for removal of the prostate

Sir Joseph Fayrer was born at Plymouth on the 6th December, 1824 Having an innate love of the sea, he made three voyages to the West Indies and South America at the age of sixteen In 1844 he entered Charing Cross Hospital, where he formed a close friendship with the great Huxley After qualification he obtained a commission in the Navy, but left that service in 1847 to accompany Lord Mountbatten on a grand tour of Europe, in the course of which, in 1849, he took the degree of M.D. at Rome On his return to England in that year, he obtained a commission in the Artillery, but left four months later to take up an Indian appointment which had been obtained for him, sailing for the East in January, 1850 In 1852 he was in executive medical charge of the military operations at Rangoon, and in 1853 was appointed Residency Surgeon at Lucknow—one of the most sought-after appointments in the Service That office carried with it the appointments of Superintendent of the Hospital of the King of Oudh and Postmaster During the siege of Lucknow Fayrer's house became a focal point for the defence and a graphic account of those days is to be found in his “ Recollections of My Life ” In 1858 he took the degree of F.R.C.S. at Edinburgh, returning that year to India as Professor of Surgery at the Medical College in Calcutta He says of his life at that time —

“ The work of a doctor in Calcutta is exceedingly heavy, he is physician, surgeon, general practitioner, and everything else, and of course has many other duties to perform, and a great deal of this work is absolutely unremunerative The expenses of living—horses, carriages, house rent—

MEMBERS



Sir John Ewing, FRS

1997-2000

PLATE VI



ST. ROSARD ROY, I.P.S.

are very great. My usual routine was as follows: Up at gun-fire, a long ride (I had several horses), chota haziri, important cases at their own homes, visit to the hospital wards, operations, clinical lecture, in the early mornings in the cold season I worked at Anatomy, breakfast at about ten, patients at home, then out to visit patients, lunch at about one o'clock, back to the College to lecture at 2 p.m. three times a week, then a drive with my wife, or a ride, dinner at eight, then more patients to visit, then to bed from which I was not infrequently summoned, besides this, casual urgent cases that came at all hours."

His interest in Ethnology and Archaeology earned him his election as President of the Asiatic Society of Bengal in 1867. He acted as personal Surgeon to Lord Mayo who frequently sought his advice in matters of medical administration. In 1870 he accompanied the Duke of Edinburgh on his travels in Northern India. In 1871 he became Honorary Physician to Queen Victoria and, in 1872, when he finally left India, he was elected I.R.C.P. In 1873 he was appointed to the Medical Board at the India Office, succeeding Sir Ranald Martin the next year as President. In 1875 he accompanied the Prince of Wales to India. In 1876 he became F.R.S. and in 1878 F.R.C.S. of London and LL.D. of Edinburgh. Innumerable other British and foreign honours were showered upon him, culminating in a baronetcy in 1896. His last years were spent near his old love the sea, at Falmouth, where he died in May, 1907 at the age of eighty-three. Among a large number of scientific and medical writings Fayrer's master work on the poisonous snakes—"The Thanatophidia of India"—takes precedence. The *B.H.J.*, in its obituary notice, said of this very distinguished officer—

"To the public for many years he was the most conspicuous representative of the I.M.S., and he will always live in the history of India owing to the prominent part which he played in the siege of Lucknow, and in other eventful occurrences during his long period of service in the East."

Sir Ronald Ross is certainly the best known officer of the I.M.S. in the present age. The whole world knows that he worked out the development of malarial fever through the mosquito. Ross was almost morbidly sensitive regarding the lack of appreciation shown by the world to his monumental work. He left India, disgusted with life and without even a formal expression of thanks from the Government, which was presumably unaware of the magnitude of the discovery he had made. As the *Indian Medical Gazette* Editorial for October, 1923, sarcastically put it: "In the little laboratory in the grounds of the Presidency General Hospital there was enacted a drama of greater importance to the world than the battle of Waterloo, and yet hardly anyone in Calcutta knew even of the existence of the laboratory."

Sir Ronald, while continuing his work at the Liverpool School of Tropical Medicine, after he retired in July, 1899, passed from one distinction to another. The following are a few of the honours which were awarded to him: Parkes Memorial Prize, 1895, F.R.S., 1901, Honorary F.R.C.S., 1901, Nobel Prize for Medicine, 1902, C.B., 1902, D.Sc., Dublin, 1904, and Leeds, 1909, LL.D., Aberdeen, 1906, Commander of the Order of Leopold II of Belgium, 1907, Royal Gold Medal of Royal Society, 1909, K.C.B., 1911, K.C.M.G., 1918. Some thirty societies

from time to time conferred their membership or fellowship upon him. He was a prolific author and, in addition to scientific works, produced a number of poems, plays, novels and memoirs. He died on 16th September, 1932. The Ross Institute, founded to continue his great work, was opened in 1927.

Certain members of the Service still preferred more academic pursuits to the active practise of their profession and the door to these was still open. James Edward Vitchison (1858) wrote on the Flora of the Kuran Valley and Afghanistan, while Sir George King, who was Superintendent of the Calcutta Botanical Gardens in 1871, compiled a Manual of Cinchona cultivation in India, and one on the Flora of the Malay Peninsula. The last of the great botanists of the Service was Sir David Prain, who succeeded King at Calcutta in 1898, and who retired in 1905 to become Director of the Royal Botanic Garden at Kew. He was the author of a work on Bengal Plants.

In Zoology Francis Day made a special study of Indian fish, when holding the appointment of Inspector-General of Fisheries from 1865 to 1876. He wrote several books on that subject. Alfred William Alcock was for many years Superintendent of the Calcutta Museum, and the author of a charming popular book "A Naturalist in Indian Seas". He retired in December, 1907. A conspicuous worker in this field was Sir Joseph Fayrer, whose great work, "The Thanatophidia of India" has already been mentioned. Other I.M.S. workers on snake poisons were John Shortt, A. J. Wall and I. Wall.

In Economics Edward Green Balfour founded the Government Museum at Madras in 1850. He was Surgeon-General, Madras, from 1871-77. He wrote several works on Forestry, and also produced an Encyclopædia of India in three volumes (1857) with two extra volumes in 1858 and 1859.

John Shortt, in addition to his work on snake venoms, wrote much on agriculture, ethnology and coffee planting, while Edward John Waring compiled, in 1868, the first official Pharmacopœia for India. He also wrote a most popular book on Bazar Medicines, which passed through six editions, the last revision being in 1901 by Sir Charles Pinder Lukis, who was Director-General of the Service in 1913.

Laurence Austin Waddell was educated at Glasgow and appointed as Surgeon in the I.M.S. in March, 1880. He entered the civil department in 1882 and acted as Professor of Chemistry at Calcutta from 1884 to 1890. In 1890 he was appointed Deputy Sanitary Commissioner, Bihar, which appointment gave him plenty of leisure for the study of archæology which formed his main interest during the rest of his service. He excavated the ruins of Pataliputra, the capital of Asoka. He discovered the birthplace of the Buddha at Surajgarh in Monghyr District. He made extensive expeditions to Tibet, was a profound scholar of the language and customs of that country and, after retirement, was appointed Professor of Tibetan at University College, London. Needless to say his Tibetan researches procured for him the nickname of the "Lama". In his later years his interest turned to the ancient Sumerian civilisation and he wrote many erudite works on that and similar subjects.

PLATE VII



DIXON GIFF CRAWFORD

including a *Sumatran Dictionary*. He edited three editions of Lyon's "Medical Jurisprudence for India" and was editor of the *Indian Medical Gazette* during four or five years. That he was not only a student is shown by his extensive war record, which included Burma, 1886, Chitral, 1895, China War, 1900, Waziristan, 1902, and Tibet, 1907. He retired in 1906 and died in 1938, aged eighty-four years.

Durom Gray Crawford, the historian of the I.M.S., was born at Chinsura in Bengal in July, 1857. He qualified at Edinburgh in 1881 and entered the Bengal Service in 1884, serving at the Calcutta Medical College Hospital as Second Physician, and later in various Civil Surgeoncies in Bengal. Crawford retired in 1911, but rejoined for service during the First Great War when he was in medical charge of the Hospital Ship *Uche at Uche* and *Sima* and was mentioned in despatches in February, 1917. His "History of the I.M.S." appeared in 1914 and in 1930 he produced his "Roll of the I.M.S. from 1615-1930". He died on 9th December, 1927, at the age of eighty-five.

Art is a subject that has not had a great appeal for officers in the Medical Service, but the work of F. H. Hendley, who joined the Bengal Service in 1869, should be noted. While at Japan he produced many works on Indian Art during a period of twenty odd years: "Jeypore and Its Arts," "Jeypore Enamels," "Damascening on Steel," "Arms Carpet" and "Indian Jewellery". The originals of J. Atkinson's sketches in Afghanistan (1837) still hang in the India Office.

It is not usually considered that honours and decorations have been showered upon the I.M.S., but Crawford was able to collect details of over two hundred which had been conferred on members of the Service, either on the active or retired lists, up to 1913 - chiefly during the half century 1850 to 1900. Prior to 1913 the V.C. had been earned twice, there were one Privy Councillor, two Baronetcies and thirteen knight-hoods, and the I.R.S. had been awarded to thirty-three officers. In addition to these more signal honours a large number of Orders were conferred, details of which it is unnecessary to enumerate in this place. The Privy Councillor was Sir John McNeill, and the two Baronets were Sir William Russell and Sir Joseph Lyster.

The custom of appointing certain meritorious officers to the Honorary Medical Staff of the Sovereign was first instituted by the Royal Warrant of 1st February, 1859.

The honour of receiving the Victoria Cross during this century fell to Surgeon John Crimmin of the Bombay Service in 1889 for gallantry in the Karenni campaign in Burma, and to Surgeon-Captain Harry Frederick Whitchurch, of the Bengal Service, in the Chitral campaign of 1895. It is curious that, whereas three Crosses were awarded during the Mutiny to officers of the A.M.D., not one was bestowed upon the I.M.S. The Cross was, however, gallantly earned by a Hospital Apprentice in the Bengal Sub-Medical Department, Arthur FitzGibbon, in the Second China War in 1860, twenty-eight years before it was conferred on any commissioned officer of the I.M.S.

It was in August, 1867, that the Government of India became alive to the

necessity of appointing Sanitary Commissioners. Certain proposals were made to the Secretary of State (1) that Inspectors-General of Jails should be appointed as Sanitary Commissioners in addition to their other duties. This was rejected as it was held that they had quite enough to do in the performance of their own duties, (2) that the duties should be imposed on Deputy Inspectors-General. The objection to this was that Deputy Inspectors-General were military officers, (3) that separate officers should be appointed, of the rank of Surgeon-Major or Surgeon. This was approved and one officer was appointed to each of the five chief provinces. The existing Sanitary Commissioner of the Bengal Presidency became Sanitary Commissioner with the Government of India. In 1880 this last appointment was combined with that of Surgeon-General with the Government of India, in the person of the head of the I.M.S. This arrangement continued until September, 1904, when the separate appointment was again made of a Sanitary Commissioner with the Government of India. Since 1911 the Sanitary Commissionership, while actually retained, became rather a branch of the office of the Director-General than a separate post.

Though the question of medical education had exercised the minds of the Court of Directors since the early part of the nineteenth century, and the Calcutta and Madras Medical Colleges had been in existence in a rudimentary form since 1835, it was not until the second half of the century that any constructive consideration was given to this matter. The Calcutta Medical College was rebuilt towards the end of the century, and colleges were opened at Agra (1853), Lahore (1860), Rangoon (1907) and Lucknow (1912). The Madras Medical College was established in February, 1835, and the Grant Medical College, Bombay, was opened in 1845.

1896—THE AMALGAMATION OF THE THREE MEDICAL ESTABLISHMENTS INTO ONE INDIAN MEDICAL SERVICE

As has already been mentioned, the three Presidential Armies were amalgamated in 1895, but it was not until 1st April, 1896, that the amalgamation of the three establishments of the I.M.S. was ordered. The commissions of the officers first admitted to the new general service were dated 28th January, 1897. In spite of the amalgamation, three separate cadres were still maintained for the purpose of promotion, so long as any members of the old services were still on the active list.

The orders for the amalgamation were issued in a Government General Order No. 202 of 14th March, 1896. The Surgeon-General with the Government of India was appointed as head of the amalgamated services with the title of Director-General.

The first officer to enter the new General Service was Andrew Augustin Frayne Marshall, who died of cholera at Calcutta in October, 1902, while acting as Superintendent of the Calcutta Museum.

By a Royal Warrant of 28th August, 1898, military titles were granted to officers of the I.M.S. These titles had been granted to officers of the Medical Staff a few months before at the same time that the British Army Medical Department, or Medical Staff, became the Royal Army Medical Corps. The change effected was that the compound titles sanctioned by the Royal Warrant of 1891 were modified by dropping the word "Surgeon". The new titles were those still in use, *i.e.* Lieutenant up to the rank of Colonel. Officers above that rank were, in future, to be styled Surgeons General with the rank of Major-General.

DECLINE

TWENTIETH CENTURY

The Period 1900-1913

The Life of a Doctor at the Zenith of the Service.

1914-1917 The First Great World War.

1918-1939 The Decisive Years --

1. Administration

2. Professional

A Note on the Subordinate Medical Services in India.

The I.M.S. and Medical Research.

The I.M.S. and Public Health

The I.M.S. and Medical Education

1939-1945 --

1. The Second Great World War.

2. Disintegration

A List of those Officers who have been Awarded the Fellowship of the Royal Society.

Citations of those Officers who have Won the Victoria Cross.

A List of Officers Killed in Action or on Active Service

THE PERIOD 1900-1913

Now that the Trinity had become a Unity certain adjustments had to be made in the organisation. In that direction the first event of this century was an order from the Secretary of State, dated 25th January, 1900, reorganising the Civil Medical Administration of Burma. Instead of an Inspector-General of Jails with Civil Medical Administration, sanction was given for an Inspector-General of Hospitals, who was also to be Sanitary Commissioner, a separate Inspector-General of Jails and a Deputy Sanitary Commissioner. Seven years later (1907) a separate Sanitary Commissioner was allowed for Burma.

In September, 1900, a special Sanitary Officer was allowed for each of the Army Commands. In 1907 the number of these officers was raised to ten and the posts were reserved for officers of the R.A.M.C.

A Home Department Order of 19th October, 1900, gave the revised list of Administrative Staff Officers of the I.M.S. as follows —

- 1 Director General of the Indian Medical Service and Sanitary Commissioner with the Government of India
- 1 Secretary to the Director General of the Indian Medical Service and Sanitary Commissioner with the Government of India
- 1 Surgeon General with the Government of Madras
- 1 Personal Assistant to Surgeon General with the Government of Madras
- 1 Surgeon General with the Government of Bombay
- 1 Personal Assistant to Surgeon General with the Government of Bombay.
- 1 Colonel with the title of Inspector General of Civil Hospitals, Bengal
- 1 Colonel with the title of Inspector General of Civil Hospitals, for the North Western Provinces and Oudh
- 1 Colonel with the title of Inspector General of Civil Hospitals for the Panjab
- 1 Colonel with the title of Inspector General of Civil Hospitals and Sanitary Commissioner for Burma
- 1 Colonel for Civil Medical Administration in the Central Provinces

In 1903 the Burma District was separated from Madras, and made independent as the Burma Command. At the same time the appointment of Principal Medical Officer, Burma, was reserved for a Colonel of the I.M.S.

In October of the same year revised rules regarding the appointment, pay, promotion, retirement, pension, leave, etc., of officers of the I.M.S. were published. These new regulations gave an increase of pay to a large number of officers in military employment, both senior and junior. An extra pension of £125 after three years' service in the rank of Colonel was introduced. Eighteen months later the new rates were made applicable to medical officers in Civil Employment. The revised rules of 1903 are important in that, for the first time, the grant of leave for study abroad was approved.

Several Royal Warrants, and Home Department Orders, were issued in 1904 and 1905 regarding promotion and precedence. The Warrant of 1905 laid down that the Director-General, Indian Medical Service, though normally having the substantive rank of Major-General, may, with the approval of the Secretary of State for India in Council, rank as Lieutenant-General.

In 1905 two other important decisions were made. The appointment of specialists in various subjects, with special pay at the rate of Rs 60 per month, was ordered in Indian Army Order No 433 of 1905. Only officers in military employ, and below the rank of Lieutenant-Colonel, were eligible for these appointments. In the same year, Indian Army Order No 492 of 1905 introduced a change of much importance, viz that in future all military administrative medical appointments would be tenable by officers of either the R A M C or the I M S, none being reserved for either Service, except that of Principal Medical Officer of the Derajat Brigade, which was to be held by a Lieutenant-Colonel of the I M S. The number of officers of each Service who might hold such appointments was fixed.

A Government of India Notification No 74 of 13th July, 1906, made a change in the rules for the allotment of I M S officers to Commands. All officers entering the Service after that date became liable for military duty in any part of India. For the purpose of civil employ, however, they were still allotted, as far as possible at their own choice, to four different areas: Madras, including Burma, Bombay, with Aden, Upper Provinces (Punjab, U P and C P), and Lower Provinces (the two Bengals and Assam). It was on the strength of this order that the names of all officers in the original Bengal, Madras and Bombay Medical Services were, from 1st October, 1906, consolidated, in order of seniority, in the Indian Army List.

On 13th March, 1908 a Royal Warrant was issued which collected all previous orders which had been passed since the amalgamation of the Services. This Warrant was later superseded by a further Royal Warrant of 3rd June, 1913. No great changes were made, the more important being that an officer might be removed from the Service if, during his first three years, his retention was considered to be undesirable, that officers after certain periods of service should be eligible for promotion, and not, as in former Warrants, that they should be promoted, that the distinction of appointment as Honorary Physician or Surgeon to the King should be confined to officers on the active list.

Meanwhile, from 1st April, 1911, a graduated scale of pension was introduced rising, by regular annual steps, from £300 at seventeen years' to £700 at thirty years' service. Regarding these pension rates granted to the I M S, Crawford gives some interesting and little-known facts. The rates have altered very little since his day.

“One of the greatest, perhaps the greatest, of the advantages of service in the I M S is the present rate of pension, which is probably higher than that of any other large graded service in the world, certainly higher than that of any other medical service. It is true that the rates of pension in the I M S, do not, at first sight, appear large in comparison with the pension of £1000 a year, given at twenty-five years' service, of which twenty-one years must have been spent on duty in

India, to the Indian Civil Service. But there are two points in which the pensions of the I M S are far superior to those of the Civil Service, *First*, the varying rates given to the I M S for varying lengths of service, whereas the Indian Civil Service must put in twenty-five years' service with twenty-one years' residence. He cannot voluntarily retire from the service on pension at any earlier date, should he resign, even with over twenty years' service he gets no pension at all. Should he be invalided, for ill-health contracted in the service, when he has completed less than twenty-five years' total service, or less than twenty-one years' residence, even should he fall short of these periods by only a few months, he receives only an invalid pension, which up to within the last few years did not exceed £450 per annum. Should he serve on to the limit allowed, thirty-five years' service, he gets no higher pension. The invalid pensions, however, were considerably raised a few years ago. *Second*, the officer of the I M S gets his whole pension from Government, while the civilian has to contribute largely towards his pension, out of his pay, throughout his whole service. He is supposed to contribute the value of £500 a year, one half of his pension of £1000 a year, and for this purpose has to contribute four per cent of his pay throughout the whole length of his service. Should he continue to serve on to thirty-five years, he continues to contribute this fixed proportion of his pay to the pension funds, and, of course, the higher the pay, the higher the contribution. It may thus happen that a civilian, who puts in thirty-five years' service, and has been fortunate in his promotion, holding high paid appointments during the last fifteen or twenty years, may have contributed to the pension funds more, sometimes even much more, than the total value of his pension of £1000 a year, i.e. more than the sum which would purchase an annuity of that amount at the age of which he retires, and may thus, practically, receive no pension at all from Government, and even be a loser, not a gainer, by his connection with the pension funds." 82

In 1912 a change was made in the designation of Military Administrative Medical Appointments. The Principal Medical Officer of the forces in India became Director, Medical Service, Army Headquarters, India, the Deputy Principal Medical Officer became Deputy Director, and the two Secretaries to the Principal Medical Officer and the Sanitary Officers of Divisions became Assistant Directors.

An important despatch from the Secretary of State for India was issued on 11th December, 1908. This document advocated a restriction in the numbers of the I M S and the engagement of non-official private practitioners in their place. This proposal provoked considerable discussion. The Indian Government, in a letter No. 20 of 20th August, 1908, accepted the recommendations in principle, but pointed out difficulties which were likely to arise, and stated that progress in that direction must be slow and tentative. The following extracts give the thrust and counter-thrust in this encounter.

Lord George Hamilton's despatch of 13th December, 1900, quoted by Lord Morley —

"It would be of such great benefit to India generally that medical men should establish themselves in private practice in the country in the same way as they do in other parts of Her Majesty's Empire without entering the medical service connected with the Army, that I am unwilling to accept proposals based upon the assumption that sufficient medical qualifications will never be found in India or elsewhere outside the Indian Medical Service." 83

Extracts from the Government of India's reply —

"One essential restriction, however, upon any reduction of the numbers of that service is that its strength must always be sufficient to meet the medical requirements of the Indian Army

In order that it may do this effectually it is necessary that it should include a large reserve of officers whose services would be available on the outbreak of war, and, as a measure of economy, these reserve officers must in peace time be employed on civil duties. It appears, however, from inquiries we have made, that about one-third of the officers holding these civil posts could not be spared for military duty even in the event of an emergency so grave as to require a general mobilization of the army in India. To the extent of about one-third, therefore, the officers in civil employ do not form any part of the real war reserve, and there would be no military objections to the transfer to independent practitioners of the civil appointments held by them.

“ There would undoubtedly be no difficulty in securing the services of private practitioners who are qualified to fill the less important civil surgeoncies, but unfortunately these are just the appointments in which the war reserve officers of the Indian Medical Service can most suitably be employed, and the transfer of these surgeoncies from that Service might, therefore, cause some embarrassment and lead to increased expenditure. For the more important appointments of civil surgeon, the bacteriological and other special posts, and the professional chairs, very few qualified candidates could at present be found. It is in our opinion of the highest importance and essential to the growth of a really efficient independent medical profession that the present high character of the instruction given in the medical colleges in India should be maintained unimpaired. Any diminution of efficiency in that direction would go far to defeat the object in view, and would most certainly retard the more general employment of independent practitioners. Subject, however, to this essential condition of efficiency we are quite willing to appoint such practitioners to professional posts whenever fully qualified candidates are forthcoming. And we shall also be prepared to appoint qualified medical gentlemen outside the ranks of the Indian Medical Service to other posts which are not required for the employment of the war-reserve of medical officers.

“ We desire to remark incidentally that we anticipate that difficulties may arise from the appointment of independent medical practitioners to particular posts, such as civil surgeoncies. Owing to the multiplicity of gratuitous services which are demanded of civil surgeons, it is quite possible that, if private practitioners are appointed, patients entitled to such services may not infrequently complain of neglect. At present it is comparatively easy to deal with such complaints, but when the civil surgeon is not a member of a particular service, and so liable to transfer, but an independent practitioner permanently resident in the station, it will be difficult, if the complaints prove to be well-founded, to provide any adequate remedy short of his removal from office, and his replacement either by another independent practitioner, if one is available, or by an officer of the Indian Medical Service.

“ In conclusion, we desire to repeat the considerations which, in our opinion, must govern any advance in the direction indicated in Your Lordship's despatch, viz, (1) that the advance should be very gradual and tentative and in the main, though not exclusively, from the bottom, (2) that it should be made only as really qualified candidates become available in India, (3) that nothing should be done to lower the efficiency of the medical schools and their hospitals, (4) that a sufficient number of civil appointments be reserved to provide for the economical employment of the war-reserve of the Indian Medical Service, and (5) that, in determining what these appointments should be, the necessity of maintaining the attractiveness of the Indian Medical Service should be borne in mind ” 84

The last word lay with Lord Morley who, on the 11th December, 1908, gave orders that there should be no further increase in the civil appointments of the Service.

“ Notwithstanding the necessity for restriction, the cadre of the Indian Medical Service has in recent years continued to increase, and, apart from other objections, its further increase will

be likely to cause serious difficulties in the matter of recruiting. I have consequently decided that the time has now arrived when no further increase of the civil side of the service can be allowed, and when a strong effort should be made to reduce it by gradually extending the employment of civil medical practitioners recruited in India." 56.

Actually the statement of the Secretary of State was not correct. The total strength of the L.M.S. in 1861 was 819. On 1st January, 1913, it was 770, a decrease of some 6 per cent.

A matter which had throughout the latter history of the Service given rise to considerable misunderstanding, and even to back-biting, was the thorny question of fees for professional attendance by medical officers of the Service, especially for attendance on Indian Chiefs and other notables. An early reference to this matter has been made in these pages but, in view of rulings made in 1901 and 1902, further comment is necessary.

A circular emanated from the Foreign Department of the Government of India on 28th October, 1901, which drew attention to the fact that the existing rules regarding attendance upon Native Chiefs and Nobles and such-like persons required that Local Governments should satisfy themselves that the fees for such attendances were reasonable and proper, and not above a maximum of Rs. 2,000 in each case. Above that level, reference to the Government of India was required.

Local Governments were then taken to task for submitting to the Government of India questions regarding fees which the latter considered to be excessive, and improper for submission. It is, of course, a moot point whether three officers who simultaneously treated an Indian Noble for delirium tremens over a period of three weeks, had earned a collective fee of Rs. 15,000 but, with the possible exception of a fee of Rs. 20,000 from a Chief for operation on a cataract in one eye, the fees enumerated by Government, when judged by international standards, were not in actual fact excessive. Various high-sounding phrases signifying nothing wound up this spiteful epistle.

One of the chief causes of contention was the lack of a proper definition of an "Indian Gentleman of high position," and it was not until this was cleared up by a Home Department Notification of 2nd February, 1911, and reasonable rules had been instituted, that this difficult question, which had raised an amount of ill-feeling quite out of proportion to its intrinsic importance, was finally solved. Further orders were issued from time to time, but only to clarify details.

The period under review saw the erection of two considerable and up-to-date hospitals. In Calcutta, the third hospital which, it will be recollected, had been set up in the Rev. Mr. Kiernander's Garden House in 1770, and extended and modified frequently since that date, was replaced, between 1902 and 1908, by the magnificent buildings of the Presidency European General Hospital. The entire cost of construction and maintenance of this hospital was borne by the Government, and the block for the reception of paying patients alone cost over three and a half lakhs (about £30,000).

The new General Hospital at Rangoon, which was sanctioned in 1904 and begun in 1906, was completed in 1911, at a cost of nearly five lakhs (about £43,000)

THE LIFE OF A DOCTOR AT THE ZENITH OF THE SERVICE

In the early years of the century with which we are now dealing, we find the Service sharing with the whole British Empire in the fruits of that long period of peace and prosperity which is inevitably associated with the reigns of Victoria and Edward VII. Money was plentiful, the Arts flourished, Knowledge expanded and, even though there was on the horizon a little cloud no bigger than a man's hand, it seemed as if this golden age might go on indefinitely. In the field of Science, under the combined influence of the doctrines of Evolution and Materialism, Man felt that in him Nature had achieved her end and, further, that to him, as the heir of all the ages, had been revealed the laws by which creation moved. There was no false modesty among the men of Science in the early days of the twentieth century.

In view of all that has since happened, we are lucky that Crawford had the forethought to preserve for us a picture of life in the Service in those fortunate days. It is felt that this can best be reproduced largely in his own words, (86) but the reader must recall that the conditions he described were those of roughly half a century ago.

“It is necessary to mention that there are differences in the nature of the work in the dozen different provinces which make up British India, and that no general description can be accurate for all. The more exact it is for one province, the less so it must be for the others. The account given is based on experience almost confined to Bengal and Bihar.

“Every officer of the I M S is posted to military duty on first entering the service, and must do two years' military duty before he is eligible for civil employ. The majority apply for civil employment sooner or later, but some officers spend their whole service doing regimental duty, and others, after a longer or shorter trial of civil work, revert of their own choice to military employment.

“The advantages of military employ are obvious, and are especially attractive to the younger members of the service. The work is usually not hard, except in times of war or epidemic, the pay is somewhat higher than in civil employ, there is always congenial society. For the regimental medical system is still in force in the Indian Army, the medical officer is one of the officers of the regiment to which he is posted, as much as any other officer in it, not a member of a separate department of his own, standing entirely outside regimental life. And, while there may be two opinions as to the relative efficiency of the departmental and the regimental system of medical administration, there can be only one as to which is socially the most

pleasant for the officers concerned. Against these advantages, however, various drawbacks must be set. The military medical officer is not likely to get anything more than his pay. In some cases, it is true, he may get charge of a cantonment hospital, or of a small civil surgery or jail, in addition to his military duties, with extra pay for the extra work, but he cannot count upon such with any certainty. And, when such extra charges are to be had, they are usually given to the senior officer available. Again, the work in the hospital of a native regiment, while light, is often very uninteresting. There is next to no surgery, and the whole professional work sometimes resolves itself into the treatment of a few cases of fever, dysentery, blistered feet, or rheumatism. In such cases the medical officer is apt to become rusty and to lose interest in his profession. And even in regimental employment, life may be deadly dull, if stationed in a small outpost, with only one or two other European officers. Such duty usually falls upon junior officers. A few extra-regimental appointments are held by men in military employ, two Secretaryships to Surgeons-General, four appointments as Staff Officer and four Medical Storekeeperships.

“On first entering civil employment, the disadvantages, to a young officer, are probably more in evidence than the advantages. It is necessary to begin at the bottom, and it is likely that the station to which a man who has just entered civil employ is first posted, is anything but a paradise. Naturally, the junior men get the least important stations, those in which the hospital is poorest and worst equipped, the allowances and the practice smallest, the social advantages least, and life most dull. And how dull and wearisome life may be in such a station, where his work is perhaps the only thing in which an officer can take an interest, only those who have experienced it can understand. Some such stations may afford an alleviation by fair sport, but by no means all. Such work falls heaviest on the junior officers, who are most likely to get it, and who feel it more than their seniors. Bengal, and especially Eastern Bengal, are the provinces in which these “penal settlements,” as they are sometimes called, are most numerous and most unpleasant, on the other hand, civil employ in Bengal is probably more lucrative all round than in any other province, even the smallest stations affording some private practice. And the medical officer sees less of such stations than officers of the other Services, the Civil Service and the Police, for the Civil Surgeoncies of a number of such stations are usually held by Military or Civil Assistant Surgeons. Nor is it likely that a doctor, as sometimes happens to men of the other Services, will be the only European in his station. Having related the disadvantages, it is necessary to display also the other side of the shield. The smallest stations are not necessarily the least healthy, some of them are fairly pleasant places to live in, if only there were a few more residents, and there may be good shooting. Moreover, an officer may expect before long to be removed to a better station, one pleasanter to live in or more lucrative. Appointments of very varied nature are held by men in civil employ, but the majority are doing the work of the ordinary District Civil Surgeon, in the regular line, the seniors and the

men most highly thought of in the better stations, the juniors and those less highly considered in the worse stations. The ordinary Civil Surgeon's work is extensive and varied, but not as a rule oppressive in amount, except in a few stations or temporarily for exceptional reasons, such as a cholera epidemic in the jail. It is always much heavier than that of a military medical officer, under ordinary circumstances, and the pay is somewhat less, but the total income is greater, and the variety of the work lends interest to it, a man must be very indifferent to his work who cannot take interest in some one or more branches thereof.

“The Civil Surgeon's first duty, when he begins his morning's work, will probably be to visit his jail, of which he is Superintendent, as well as Medical Officer. Every civil station has a jail. But in some, about one out of every ten, the jail is a Central jail, receiving the long-term prisoners from eight or ten other districts, as well as the ordinary crop of convicted criminals from its own district. Most central jails are too onerous a charge to be placed on a Civil Surgeon, in addition to his own duties. Except a few of the smaller ones, each has therefore a medical officer as “whole time” Superintendent. In such cases the Civil Surgeon has nothing to do with the jail, no allowance, and no work nor responsibility. The ordinary district jail contains from 50 to 400 prisoners, usually over 200, and the jail allowance varies from Rs 50 to Rs 100/- a month, according to the number of prisoners in the jail. The larger ones have, under the Superintendent, a staff of three native officials, a jailor or *darogha*, an assistant jailor or *naib darogha*, and a Sub-assistant Surgeon in subordinate charge of the jail hospital. Some of the smaller jails have no jailor, only the two other native officials. The warder guard, which also is under the orders of the Superintendent, varies in strength with the size of the jail. The jail will usually give the Civil Surgeon from one to two hours' work a day, according to circumstances. A few of the smaller central jails are held by Civil Surgeons, in addition to their own duties, with a jail allowance of Rs 300 a month.

“From the jail the Civil Surgeon will probably go on to the hospital, where he will most likely have another hour's work at the least, it may be two or three hours, sometimes, in times of pressure, even more. The time spent in hospital, however, depends a good deal on a man's own enthusiasm and fondness for the work. In subordinate charge of the hospital he will usually find a Civil Assistant Surgeon, a graduate of one of the Indian Universities, a highly trained and educated officer, speaking English fluently, and generally quite competent to take charge of the hospital, and the other medical duties of the station, during the Civil Surgeon's frequent absence on inspection duty. In some of the smaller hospitals the officer in subordinate charge is a sub-assistant Surgeon, a diplomate of one of the vernacular medical schools. Men of this class vary very much in their work and in their professional attainments, the best of them are very good, and it is usually the best who are serving in stations where there is no Assistant Surgeon. Almost all of them have enough knowledge of English to understand it and to make themselves understood.

At the hospital the Civil Surgeon will probably do most of the operative surgery, though it is advisable to let the Assistant Surgeon also have a fair share of this, the most interesting part of the work, to keep up his interest and knowledge. The amount of operative surgery varies greatly in different places, with the locality (e.g. stone is very common in some parts, almost unknown in others), with the equipment of the hospital, which must chiefly depend upon its income, with the skill and popularity of the Civil Surgeon and the Assistant Surgeon, and with the accessibility of a larger or more popular hospital.

Another daily duty of the Civil Surgeon is his office, where, with a native clerk to assist him, he will have to deal with a pile of correspondence, from the Inspector-General of Hospitals and Sanitary Commissioner, from the Magistrate, from the dispensaries under him, from neighbouring Civil Surgeons, etc. Office work is seldom very urgent, it can usually be done, if preferred, in the afternoon. It occupies about an hour a day, sometimes more, but often less. The clerk is, as a rule, competent to prepare the numerous returns, which form the bane of the lives of most officers of all Services.

There will also be a police hospital in the station, which has to be visited daily. This seldom takes much time. A sub-Assistant Surgeon is in subordinate charge, there are seldom many patients, and those sometimes not seriously ill. This can be fitted in when most convenient, according as it is near the jail, the hospital, etc.

A very important part of a Civil Surgeon's duties is the performance of medico-legal *post-mortems*. These, however, are not nearly so numerous as they were twenty years ago, though even now the majority never get the length of requiring evidence in court. A *post-mortem* should, as a rule, be done as soon as possible after the body has reached the mortuary, and the papers have been received by the Civil Surgeon from the police, though the time this work is done will depend more or less upon the locality of the mortuary, etc. It is possible one will naturally prefer to do it after the hospital visit, rather than before. The Civil Surgeon always has the help of a *dom*, or sweeper, in cutting up the body.

The time for visits to patients, official or private, will necessarily depend on various circumstances, such as the urgency of the case, the locality of the patient's residence, etc. Civil Surgeons have to attend gratuitously, at their own homes, as part of their duties, all civil officers at the headquarters of the district, European or native, whose pay is over Rs. 250/- a month. Attendance on wives and families is not gratuitous, but private practice, the usual arrangement being for a civil officer, whose wife and family are living with him, to pay the Civil Surgeon one week's pay in the year for medical attendance on them. Military officers are entitled to free attendance on their wives and families, as well as on themselves. In both cases medicines, such as are available, are supplied free by Government.

The Civil Surgeon is also *ex-officio* Superintendent of Vaccination and Inspector of Factories in his district. As Superintendent of Vaccination, he will have from

20 to 50 vaccinators, and from two to six native inspectors of vaccination under him. Vaccination work is done almost entirely in the cold weather, between October and March. For the inspection of factories fees are paid by Government to the Civil Surgeon, Rs 16 for each inspection, if the factory employs less than 200 hands, Rs 32 if it employs over 200, as most of them do, the number in some running up to five or six thousand. In many, indeed in most, districts there are no factories, hence no factory inspection and no fees, in some few, the amount of fees averages Rs 100 or even more monthly throughout the year. Factories should be inspected at least twice yearly. In some cases whole-time medical factory inspectors have now been appointed, under the new Factory Act of 1912. Probably, sooner or later, all factory inspection will be done by whole-time men.

“ In a very few districts the Civil Surgeon is Superintendent of a Lunatic Asylum or of a vernacular Medical School, the allowance being usually Rs 200 or Rs 250 a month for each.

“ Every Civil Surgeon has to do a certain amount of touring and inspection work during the year, inspecting dispensaries and vaccination. The number of outlying dispensaries in a district varies from two or three up to about forty, it is usually from twelve to twenty, the more dispensaries, the heavier the office work. Theoretically he is supposed to inspect each dispensary four times a year, but where there are over twenty dispensaries this becomes an absolute impossibility, having due regard to work at headquarters. Practically, the amount of inspection work, so long as each dispensary is visited at least twice a year, is left very much to the Civil Surgeon's own energy and discretion. Vaccination inspection is done while visiting dispensaries in the cold weather. To inspect 3,000 or 4,000 cases of vaccination in the season is fair work, few do as much as 10,000. When travelling on duty the Civil Surgeon receives travelling allowances at the same rates as other civil officers, double first-class fare by rail, by road eight annas a mile if he covers more than twenty miles in a day, five rupees a day when he does less, or when halting. The military officer, travelling on duty, receives a warrant, entitling him, and his family if he has one, to travel first class, he also is allowed to take with him, free of expense, several servants, a quantity of luggage, and, if he is a mounted officer, one or more horses.

“ The majority of the medical officers in civil employ are Civil Surgeons of districts, but there are many other branches of civil medical work.

“ Some forty men are employed as Residency Surgeons under the Foreign Office, Surgeons to the Residents at Native Courts, etc. Some of these appointments are among the pleasantest open to the Service, some are also lucrative. Others are in desolate and distant places, ‘ remote, unfriended, melancholy, slow ’. Naturally the seniors usually hold the best appointments. Either as Civil Surgeon or as Residency Surgeon, it *may* happen that a man never sees a bad station, but such a case is exceptional. An officer who retired ten years ago, with 33 years' service, got one of the pleasantest and most favourite Residency Surgeoncies at three years' service,

held it for 25 years, and then put in his last five years as an Inspector-General of Civil Hospitals

“ The Jail Department employs a considerable number of men Its advantages are higher pay than the regular line, a free house, service in fairly good stations, and the chance of becoming an Inspector-General of Jails, of whom there is one in each province, highly paid appointments, usually filled from the Jail Department The disadvantages are monotony of work, and separation from professional, especially from surgical work

“ The Professorships in the Medical Colleges are perhaps the appointments most sought after They are by no means well paid, considering that they are supposed to attract the very best men in the Service, but lead to professional reputation, and usually carry with them a large, sometimes a very large, private practice At the same time, the expenses of living in the Presidency towns are great, and the work of a man who runs a large private practice, as well as holding a University Chair, and does his duty by both, is very hard indeed, while the amount earned is usually much exaggerated, as no doubt is also the case with the most successful men at home

“ There are several junior appointments, in connection with the medical colleges and hospitals in the Presidency towns, which are well paid for the standing of the junior men who hold them, and give great opportunities for professional work, sometimes for professional reputation

“ The Scientific appointments are few in number, but are usually well paid The appointment of Superintendent of the Calcutta Botanical Gardens is about the best, the officer holding it is also Government Quinologist, and Professor of Botany in Calcutta Medical College, and receives an extra Rs 200 a month, as well as a good house, rent-free in the Botanical Gardens at Sibpur, on the Hugli, opposite Calcutta There is also a junior Botanical appointment, that of Curator of the Herbarium, the holder of which receives only grade pay and a house, but usually succeeds in turn to the higher appointment There is a second Botanical Garden at Saharanpur, in the United Provinces, the charge of which has been held by some of the most distinguished Botanists in the Service, Royle, Falconer, and Jameson, but for many years past the Superintendent has not been a Service man

“ Two appointments in the Natural History line are open, those of Superintendent of the Calcutta Museum, with a good house in the Museum grounds, and Surgeon Naturalist to the Indian Marine Survey, serving on the Royal Indian Marine Steamer *Investigator* These scientific appointments are sometimes, but not necessarily, held by men in the I M S They have the great advantage that a man draws his pay, and that good pay, for pursuing his own tastes and hobbies, also that they are very independent positions, much more free from criticism than any appointment in the regular line of any Service

“ The Chemical Department furnishes Professors of Chemistry and Chemical Examiners, one to each province The appointments are congenial to those who have a taste for chemistry, but not highly paid

“ There are a few Bacteriological appointments Each medical college has a Professor of Pathology, who pursues this subject and there are a few other appointments outside the colleges in the Research laboratories and in the Pasteur Institutes Some of these appointments are held by men who do not belong to the I M S

“ The Sanitary Department employs a good many officers, one Sanitary Commissioner for each province, with from one to three Deputy Sanitary Commissioners The Sanitary Commissioners are usually officers of from twelve years' service upwards, and are well paid The Deputy Sanitary Commissionerships are neither very well paid nor very popular, men are generally ready to leave them for fair Civil Surgeoncies The Sanitary Department requires better pay in the junior appointments to attract, and keep, good men A few of the largest cities have special Health officers, fairly well paid, who may or may not be Service men

“ There are four appointments in the Mint, which have been usually held by I M S men, those of Assay Master and Deputy Assay Master in the two mints, Calcutta and Bombay The Assay Masterships are about the best paid appointments open to men in the I M S They are always filled by the promotion of the Deputy Assay Masters, and these appointments require a special training, which few men entering the Service have undergone These posts will probably, in future, be filled not by officers of the I M S, but by specially qualified men, appointed from England

“ During the last century a good many men drifted off into employment in the ‘ Commissions ’ of the non-regulation provinces, as Magistrates or Deputy Commissioners, but for the last thirty-five years no man in the I M S has been thus employed Several also served as Political Agents and Residents in the Political Department, but no I M S man is so serving now, the last who did so was Sir George Robertson, of Chitral fame

“ The length of service after which an officer may hope to obtain the substantive medical charge of a regiment varies from time to time, with the rates of retirement and promotion, but roughly may be taken as about four or five years In the Indian Army List of 1st January, 1913, the senior officer shown as officiating in a regiment has six years' service, the most junior holding a permanent charge five years These rates are rather slower than those which prevailed a few years ago, but much quicker than those of thirty years ago In the cold weather of 1882-83 over fifty junior medical officers were on unemployed pay drawing the munificent sum of Rs 286 a month

“ A medical officer, on entering civil employment, begins as an officiating Civil Surgeon, taking the place of a substantive Civil Surgeon absent on leave or deputation The period during which he remains officiating before getting a substantive civil appointment varies greatly from time to time, but is seldom less than one year, or more than three years Necessarily, it depends entirely upon the number of vacancies, by death, promotion, or retirement, which may occur among the Civil Surgeons of the province in which he is serving An officer who has the substantive medical charge of a regiment, before he enters civil employ, may retain

a lien on his substantive regimental appointment for three years, if not confirmed in civil employ before the expiration of that time. On being so confirmed, or on completing three years' absence from his regiment, he is struck off his military appointment.

“The number of first-class Civil Surgeoncies is not large. In Bengal, before the partition, there were six to some forty-five Civil Surgeoncies. In the U P and Oudh there are four out of about thirty-five, in the Panjab six out of about twenty-five. They are given by seniority and merit. Except in the Panjab, an officer can hardly hope to attain a first-class Civil Surgeoncy under twenty years' service. But while the *pay* of a second-class Civil Surgeon is less than that of an officer of the same length of service in medical charge of a native regiment, the *income* of the former is almost always larger, sometimes much larger, than that of his contemporary in military employ. Almost every Civil Surgeoncy carried with it some allowance from Government, the charge of a jail at least, if nothing more. And there is always the chance of private practice, some at least in every station, while in each province there are several stations which may still be considered lucrative appointments.

“The relative amount of professional work in military and civil employment respectively has varied greatly from time to time. For three-quarters of a century after the formation of the I M S, military duty necessitated much, civil employ little, professional work. An officer who had spent much time in civil employ was supposed, it is to be presumed with truth, to have become slack and out of touch with his profession, from want of practice.”

Half a century earlier the same opinion had been expressed in more forcible language by Sir Ranald Martin, in a memorandum on the conditions of the Service, which he submitted to the Government of Bengal in June, 1838.

“The Commercial habits acquired at a civil station, and too frequently the habits of professional idleness induced by want of practice, all tend greatly to disqualify such as have passed any number of years in such places for a return to their proper duties with the army, indeed, many of them are so well aware of this as to quit the service sooner than place themselves in so irksome a situation as that of a military surgeon. In idleness a medical officer loses confidence and consequence in his own eye, and his respect very soon vanishes with the public.”

Crawford continues —

“To us at the present day it seems strange to hear it said that medical officers in civil employ get slack and out of touch with professional work from absolute want of practice therein. For the past half-century the tendency has been entirely in the opposite direction. The Military Surgeon, except in times of war and epidemic, has had comparatively little to do. The Civil Surgeon has had most ample opportunity of professional work, both medical and surgical, in the headquarters hospital of his district, not to mention his police and jail hospitals, his outlying dispensaries, his official patients, and possibly a large private practice. Between 1870 and 1880 a great extension of surgical work in civil hospitals took place, first in the N W P and Oudh, followed rapidly by other provinces, and a continuous increase has gone

on to the present day Some officers, Freyer, Keegan and H Smith, to mention only a few, have attained a world-wide reputation as surgeons, and have been second to none in their respective specialties, while every Civil Surgeon has been expected to be able to carry out, with the means at his disposal, almost all major surgical operations, and, with few exceptions, has been equal to the demand upon his professional capacity But a century ago the case was very different The Civil Surgeon's professional work then consisted in attendance on a few Government servants, and in that alone Private practice was non-existent, except in a few specially favoured posts, such as the Presidency cities, half a dozen large mofussil towns, and the chief Residency Surgeoncies The only hospitals in the mofussil were military hospitals, for troops and followers under military surgeons Hospitals or dispensaries for the general population there were none It was not, in most cases, until the thirties of the nineteenth century that such hospitals were first started at the headquarters of districts, chiefly by the energy of individual Civil Surgeons Even so late as the second half of the last century, the Bengal Medical Regulations of 1851 direct that the number of in-patients in civil dispensaries in the mofussil must be limited to eight, chiefly surgical cases The Civil Surgeon, with hardly any professional work, naturally got slack and out of practice He frequently filled various non-professional posts, with extra work and extra pay, often he was postmaster of his station, not uncommonly registrar of deeds, sometimes *sadr amin*, or sub-ordinate judge If his time and energies were not thus occupied by Government, they were probably devoted to zamindari, planting or trading He was hardly a medical officer at all, rather a Government official with some medical knowledge and duties

“ Now the pendulum seems to be swinging again in the other direction The Civil Surgeon, with his multifarious duties, his hospitals, his medico-legal work, his semi-professional duties as Superintendent of the jail, and of vaccination, and as health officer, his administrative work in his office, sometimes a large and heavy office, his non-professional work as member of the District Board and of the municipality, is worked up to his fullest capacity His hospital work as a rule ensures his being a good surgeon and a fair physician But for bacteriological and scientific work, which are becoming yearly more important, especially in the tropics, he has not the necessary leisure It is only the specialist who can afford the time necessary for such work The military medical officer, on the other hand, except at times of special stress, has usually more leisure, part of which he may devote to scientific work Many do so, with little recognition But it was in the comparative leisure of a military medical charge that the most distinguished member of the Service in our day, Major Sir Ronald Ross, found time to begin the researches which were later crowned with such ample success

“ In former times the mortality of Europeans in India, for all services and of all ranks, was very high indeed, but it has now sunk to what may be called a normal level, and officers serving in India incur little more risk to life and health than at home Though cholera, dysentery, malarial fever, or rather its sequelæ, and, among the

young, especially enteric fever, still take their toll of life, the doctor in India escapes many risks which he has to take as a matter of course, at home, those of the ordinary infectious diseases of Europe, scarlet fever, diphtheria, etc., none of which can be called common, though most do occur, in India, and risks due to exposure, especially at night, in a cold climate

“ Even in early times, however, many men put in long periods of Indian service, and survived to enjoy a prolonged period of retirement at home. Holwell, after nearly thirty years of hard service in India, with only one long and one short spell of absence in England, lived in retirement for over thirty-eight years. And his was by no means a solitary instance

“ Three members of the Bengal Medical Service have, within recent years, lived to over the age of one hundred. John Bowron, was born in February, 1799, entered the Sub-Medical Department as a medical pupil on 1st July, 1813, became Apothecary on 7th September, 1816, was promoted to a commission as Assistant Surgeon on 20th December, 1825, became Surgeon on 16th December, 1840, retired on 31st December, 1851, and died at Hove, having just completed his century, on 5th March, 1899. He served with his regiment, the 37th N I, in the Panjab War of 1849

“ Thomas Lambert Hinton was born on 1st May, 1808, the son of William Hinton, of Daglingworth, Cirencester, entered as Assistant Surgeon on 30th January, 1842, resigned on 24th October, 1845, and settled in practice in England, where he was for many years Surgeon to Reading dispensary. He died at St Leonards on 14th June, 1908. The careers of these two officers were, however, widely different. Hinton spent less than four years in India, Bowron certainly about forty, and probably over fifty years

“ The senior officer now living, on the retired list of the I M S, is Surgeon-Major Henry Benjamin Hinton. He was born on 7th March, 1813, the son of Benjamin Hudson Hinton, cashier in a Bank at Portsmouth. He took the M R C S in 1835, and got his commission as Assistant Surgeon, Bengal, on 14th January, 1839, becoming Surgeon on 31st December, 1852, and Surgeon-Major on 14th January, 1859, and retiring on 7th March, 1868. After he left the Service he settled in Australia. He was serving in India at the time of the first Afghan War, though he did not himself take part in that campaign. His war services include Gwalior, 1843-44, the Sutlej campaign of 1845-46, when he was present in the actions of Badiwal, Aliwal, and Sobraon, receiving the medal and clasp, the Panjab campaign of 1848-49, and the second China war of 1858-60. He did not serve in the Mutiny

“ It is curious that these two Hintons, the only two officers of that name who have served in the I M S were almost exactly contemporary with each other, both lived to over one hundred years, yet they were not related to, nor even acquainted with each other ”

A parallel is then drawn with conditions in the medical profession in England at that time —

“ In the *British Medical Journal* of 27th June, 1903, Dr J Fletcher Little, L C C , speaks forcibly of the present condition of the average general practitioner in England as follows —

“ The long and costly training, the arduous nature of the work, by night as well as by day, the inevitable and heavy expenses, the few prizes, and the small average net income, the strictly personal and precarious character of the work, which causes all earnings to cease during illness or incapacity, the short average of life, which is less than that of other professions, such as the clerical and the legal, the warning increase of insanity from the intolerable strain ”

“ Surely the I M S with all risks, offers a better prospect than this Service in the I M S means work, man earns his living by the sweat of his brow, nowhere more literally so than in India Of course, it involves a long residence, to use the harshest word, ‘ exile,’ in India, but exile tempered by a liberal allowance of fairly paid furlough No man need enter the I M S now-a-days expecting to make his fortune, though, using the word fortune in a moderate sense, even in recent times some few men may be said to have done so. The days of great fortunes to be made in Indian service, such as Joseph Hume’s £40,000 in twelve years as an Assistant Surgeon, have gone long ago, and gone for ever Even a century ago fortunes were usually made, not by practice, but by trade and contracts A man who enters the I M S should do so with a mind made up not to waste his time and his energies in futile regrets that the career he has deliberately chosen involves service abroad instead of at home, nor grudgingly to compare his own position and prospects with those of the most successful of his contemporaries in England, while he forgets those who have failed to attain success, or who have hopelessly gone under, but to take the rough with the smooth, to worry through hard times in hope of the better times which are sure to come, sooner or later, and to do his best for the country, for its inhabitants, and for the Government, as well as for himself He will find open to him a career with plenty of interesting work, not always hard work, pay at once sufficient to maintain him as a bachelor, and sufficient in a few years to enable him to marry, pay steadily increasing as his length of service, and, if married, his necessary expenses increase, some provision for his family if he falls by the way, and finally a pension, in its earlier stages sufficient to live upon while he gets his footing, if he makes up his mind to retire early, before he is too old to start on a new career, in its later stages, if he prefers to hold on in the Service, sufficient to maintain him in comfort after retirement ”

Many, it is to be hoped the majority, of these who have served in the I M S in recent years, will endorse the opinions expressed above Many, on the other hand, will not do so Every profession has its share of discontented men, and the Indian Army is no exception to the rule

In the preface to his book “ *The Man of Property*,” Galsworthy, looking back over his long saga of the Forsyte family during the nineteenth and early twentieth centuries, wrote as follows —

PLATE XIII



JOHN ALEXANDER SINTON, V.C., F.R.S

[Facing p 171

"If the upper middle class, with other classes, is de-fined to 'move on' into amorplism, here, pickled in these pages, it lies under glass for strollers in the wide and ill arranged museum of letters to gaze at."

So, for us, has Crawford in this chapter embalmed the Indian Medical life of that age—an age which, seen across the smoke, the noise and the turmoil of two great wars, appears to us in many ways almost unical—Saturnian—with a freshness and a leisure the like of which the world can never see again.

1914-1917—THE FIRST GREAT WORLD WAR

An attempt will now be made to sketch, against the background of events, an impression of the activities, and especially of the difficulties, of the Service during that great struggle. This can obviously only be an outline. If details are desired they must be sought for elsewhere. In reading this account it should be borne in mind that the efficiency of organisation which has now been evolved to support the Medical Services in War was largely lacking during these earlier campaigns. The breakdown in such areas as Mesopotamia was due not so much to serious defects in the Medical Services themselves as to a general failure in administration and supply which were required to operate on a scale which at that time was without precedent. When these difficulties were ironed out the Medical Services ran smoothly enough.

During these years the Service was represented in France, Flanders, Palestine, Asia Minor, Trans-caucasia, Persia, China, Aden, East and West Africa. Ninety-two retired officers rejoined for duty and over 1,000 temporary commissions were granted.

FRANCE AND FLANDERS

The Indian Contingent arrived in France at the end of September, 1914. It had no separate medical administration at G.H.Q. in France beyond its A.D.S. of divisions and corps. The Contingent was composed of the 3rd (Lahore) Division, the 7th (Meerut) Division and the 1st and 2nd Indian Cavalry Divisions. Of these, the Lahore and Meerut Divisions were combined into an Indian Corps with Colonel Trcherne of the R.A.M.C. as D.D.M.S. The two Cavalry Divisions were formed into an Indian Cavalry Corps after landing in France.

Three clearing hospitals accompanied the troops—the "Lahore" and the "Meerut" with the Indian Corps, and the "Lucknow" with the Indian Cavalry Divisions. These were composite units with one section of a British, and three sections of an Indian, Clearing Hospital. In addition to these, two stationary hospitals of the Indian type, the "Meerut" and the "Lahore," three British General Hospitals, the "Lahore," the "Meerut" and the "Rawalpindi" and two Indi

the middle of March, 1917 Preparations were then made for the attack on Gaza, the first battle for which was fought on 25th March, and the second on 17th-19th April, 1917 In neither of these battles were our forces successful, and the casualties were heavy—about 7,000 being killed or wounded

When General Allenby assumed command of the Expeditionary Force in June, 1917, and was making his preparations for the campaign in Palestine, there was an increase in hospital accommodation to support the Indian Divisions arriving from France and Mesopotamia, and to provide for the needs of the Indian troops which were gradually replacing British in the XX and XXI Corps Six hospitals, Nos 39, 41, 44, 50, 51 and 54 I G H, were sent to Egypt from India, or from Mesopotamia Five were placed on the lines of communication and one was established at Suez

General Allenby assumed Command of the Egyptian Expeditionary Force in June, 1917, but it was not until the night of the 30th-31st October that, by an outflanking march of twenty-five miles to the hills east of Beersheba, he opened the brilliant campaign which added lustre to his name, and which led quickly to the collapse of the Turkish Army Gaza was attacked for the third time and taken on 7th November, between October and December 12,000 of the enemy were made prisoners, Jerusalem surrendered on 9th December, General Allenby entering that city on 11th December to be hailed by the Arabs, who confused his name with "El Nabi," as the prophet "that was for to come," foretold by their poet, Ibn Khasi, a thousand years before Jericho fell on 21st February, 1918 In April and June, 1918, the Meerut and Lahore Divisions of the Indian Army which had been sent to Mesopotamia from France, arrived in Palestine Indian Cavalry arrived from France, and twelve Indian battalions from India, to replace British battalions going to France in July of that year At that time the scarcity of I M S officers in Egypt was so great that there were only 86 out of an establishment of 283, and practically no members of the Assistant Surgeon or Sub-Assistant Surgeon classes

Meanwhile, in June and July, operations in which Indian troops were largely used, forced the enemy back to within twenty-two miles of Jerusalem Preparations were made for the final defeat of the Turks, and an attack was launched in September Our Armies swept rapidly through Palestine and entered Syria by the middle of October Aleppo surrendered and an armistice was signed on 31st October The enemy, during these operations, lost 75,000 prisoners, including 200 officers and 3,500 other ranks of the German and Austrian Armies

The rapidity of these advances put a great strain on the medical organisation, which, however, appears to have been more suitably adapted to meet them than was the case in the other Eastern theatres of war, though there were moments, as, for example after the advance to Jaffa, when the difficulties were very great The incidence of malaria was extremely high among troops operating in such pestilential areas as the Jordan Valley

GALLIPOLI

An Indian Infantry Brigade, consisting of one Sikh and three Gurkha battalions, together with an Indian Mountain Artillery Brigade reinforced the 29th Division on 1st May, 1915. In support of these were Field Ambulances, and the hospital ship *Ajax* was organised for the use of Indian casualties.

One I M S officer lost his life from wounds during these operations—Michael Foster Reaney

MACEDONIA

Until after the armistice on 30th September, 1918, the Indian troops with the force in Salonika consisted only of Transport drivers and men of Indian Mountain Batteries, under 1,000 in strength in 1916, and their needs were attended to by Field Ambulances. After the armistice, No 48 I G H was established but was, in March, 1919, transferred to Constantinople, where it served the Indian troops working with the Army in the Black Sea.

MESOPOTAMIA

This portion of the war became the special charge of the Indian Government, and therefore merits rather more attention than the preceding. Shortly after war had been declared in Europe an Expeditionary Force consisting of the 6th (Poona) Division was sent from India in order to protect British interests in the Persian Gulf. At the end of October, 1914, war had been declared with Turkey and operations in lower Mesopotamia were necessitated. Improvised hospitals were established on the S S *Varela* for British, and on the S S *Erinpura* for Indian casualties. The *Varela* was staffed by one section of No 3 B G H and two sections of No 57 I G H and the *Erinpura* by No 19 C C H and part of two sections of No 9 I G H. Basra was entered on 22nd November, 1914, and Qurna on 9th December, 1914. By that time British and Indian Hospitals had opened at Basra, which became the base and G H Q of the expeditionary force. No 19 C C H staffed the river steamers on which casualties were brought down to the base for later evacuation to India.

Shaiba was occupied by the end of the year as a defensive outpost for Basra, and operations there, and at Ahwaz, cleared the enemy from both flanks of our force. By April, 1915, he was retreating to Amara and Nasiriya. On 31st May the advance to Amara began and the town was captured on 3rd June, Nasiriya being occupied on 25th July. During these operations the greatest difficulties had to be overcome in coping with the disposal of casualties. "The outstanding failure of the medical service was the lack of the full complement of medical units, and failure to appreciate the immediate necessity for modern appliances, such as hospital steamers, motor ambulance cars, electric plant, ice and soda water machines."

"The evacuation of the sick and wounded from these actions to the base was bad and very trying to the patients. The river steamers and barges had brought up troops, animals and stores on their upward journey, and the military necessity was such that no time was allowed for the

medical personnel to clean or disinfect the vessels before the sick and wounded were placed on board. The medical convoy party on board was very small and all its time was occupied in dressing the patients. The supply of medical comforts was deficient. The journey downstream lasted several days. Under ordinary circumstances this journey, even to a healthy man, was a most uncomfortable experience, but to the many wounded crowded on board, surrounded by insanitary conditions, lying on the hard decks and receiving the minimum of attention or comforts, it must have been a torture. There appears to have been no co-operation between the A D M S of the Division and the D D M S at G H Q. No plans of evacuation seem to have been drawn up. No convoy parties were arranged for and the lessons of these actions do not seem to have been fully realised. That this is so, is borne out by the fact that the D D M S, G H Q in a report to Simla, simply states there were difficulties in evacuation. He neither asked for motor boats nor recommended the provision of river hospital steamers. He did, however, ask on the 13th August for a steamship with capacity for 150 cases or for a tug capable of drawing two mahelas. Both these requests were refused by the Inspector-General of Communications on 18th August " 87

The next objective of our army was Kut-al-Amara, where the Turks were strongly entrenched. So, on 1st August, 1915, a detachment of the 6th Division occupied Alı Gharbi. By the 26th September contact had been made with the enemy seven miles downstream from Kut and after a brisk engagement he was forced to evacuate his position, leaving fourteen guns, 1,153 prisoners and nearly 1,000 dead.

" The striking force meant to advance and pursue the Turks. It had not its full complement of field ambulances, instead of 5 field ambulances with a total of 300 sections it had only 3 field ambulances, or 14 sections. The personnel of these sections was exhausted, and had been depleted by sickness and the performance of extra duties. Much equipment had been expended during and after the battle, yet it was proposed to immobilize these units still further by again converting them into improvised stationary hospitals, in fact, on 4th October there were 516 sick and wounded with the 16th and 17th Brigades when their field ambulances reached Kut. The serious cases that were evacuated downstream were placed on board any boat that was available. The personnel and equipment necessary for their treatment was the minimum that could be spared. The discomfort suffered by these patients was exceptionally trying, but merely typical of the standard prevailing in Mesopotamia at this time " 88

The Turks retreated to positions astride the Tigris at Ctesiphon and the 6th Division occupied Kut. On 22nd November the enemy was engaged at Ctesiphon, but strong counter-attacks by the Turks forced our troops to withdraw, having lost 690 killed and 3,800 wounded (about 30 per cent of the force).

" The medical arrangements of the 6th Division for the battle of Ctesiphon were based on the previous experience gained at Kut and Es Sinn. It is obvious that, with the units at the disposal of the A D M S no adequate arrangements could be made for treating the wounded collected on the field of battle. At the same time there were two prominent defects in his arrangements, which had been made in consultation with the General Staff. The first was that all walking wounded were to be evacuated forward into Baghdad, a town still in the hands of the enemy, the second was the failure to appoint an embarkation medical officer and staff to arrange and supervise the embarkation of wounded at Lajj. Few wounded were evacuated to Lajj until the 24th, when they commenced to arrive in great numbers. Previously two of the steamers had been prepared in a rough-and-ready way for the more serious cases, but as the ever-increasing number of wounded arrived it became necessary to put them on board all vessels obtainable. But notwithstanding the defects and the deficiencies of medical personnel, medical equipment or transport, all the wounded were eventually

evacuated. This was a remarkable achievement carried out during a hazardous retreat when lines of communication were threatened and at times cut by marauding Arabs. Great credit must therefore be given to all medical officers with medical units and regiments for their devoted work in thus evacuating their wounded. There was no time to clean vessels soiled by accumulations of filth and dung, the one thing that was all-important was to get the sick and wounded on board and take them downstream. Under such conditions the wounded suffered considerably, sufferings which are better imagined than described." 89

On the 31st December, 1915, this column marched into Kut still retreating before a superior force of Turks. "Seldom have British troops accomplished longer or more exhausting marches than those of the 1st and 2nd December, 1915, practically without food and under terribly trying conditions. Such was the exhaustion of the troops that no attempt at digging trenches was possible until next day, when the Turkish forces were only about ten miles away. Men lay down where they halted and could not be moved. The enemy, however, was in a similar condition and no attack was made." By the 7th December the Turks had invested Kut.

A force, named the Tigris Corps, was promptly organised at Ali Gharbi for the relief of Kut, out of units of the 28th Infantry Brigade and the 6th Cavalry Brigade and most of the transport of the 6th Division. With this Corps were No. 131 Indian Cavalry Field Ambulance and sections of British Cavalry Ambulances, together with sections of other combined ambulances which arrived later—in all eleven sections were available. Regiments of the 3rd (Lahore) and 7th (Meerut) Divisions which were arriving from France and Egypt were hurried up to join this force. These had, however, been embarked at Marseilles without their medical units, and this act of official stupidity rendered even more difficult the difficulties of the medical services in Mesopotamia. As no administrative Medical Officer was appointed to the H Q. of the force, the G O C. on his own authority appointed Lieut.-Colonel G. B. Irvine, I M S., as his D D M S., who then informed the D M S. of his appointment. The latter countered by dispatching two sections of a Field Ambulance without stretchers, bearers or dressings, followed by two more with bearers but no equipment, with the cynical observation that these might be used on river steamers for conveying sick and wounded. In spite of his apparently insuperable difficulties Lieut.-Colonel Irvine managed to scrape together an assortment of improvised ambulances to accompany the relieving force when it eventually set out on 31st December, 1915, accompanied by the *Julnar* to act as a hospital ship, and a private launch, the *Aerial*, to evacuate casualties from dressing stations on the bank to the *Julnar*. He took the precaution of pointing out to the Army Commander that, although these arrangements were the best that could be made, they were totally inadequate.

A battle was fought, on 6th, 7th and 8th January, 1916, at Shaikh Saad, below which the Turks had entrenched themselves astride the river. The official story proceeds—

"The D D M S. proposed that all the wounded should be gathered together on the left bank and that the force should leave sufficient troops to protect them until they were evacuated to the

base At 1 p m , however, he was ordered to put on steamers and barges all men who could walk and to take them forward to Shaikh Saad and to leave the remainder until they could be evacuated by steamer By 8 p m on January 7th the supply of dressings and blankets was completely exhausted A few of the wounded were lucky and had been covered by one blanket Very many were uncovered and became delirious during the night from fatigue, exposure and hunger Two thousand wounded were transferred to the post hospital at Shaikh Saad and three medical officers with a few subordinate personnel were left to look after them Rations were dumped both for British and Indians, but there was no supply and transport personnel to issue them This had to be done by the medical officers, the senior of whom had to spend his time issuing rations instead of dressing wounded " 90

The Turks were again engaged on the Wadi River on 13th January and at Hanna on 20th January, where torrential rain and seas of deep tenacious mud made the operations extremely difficult The extempore medical organisation did its best

" The evacuation of sick and wounded from the battlefield was very unsatisfactory as there was little or no ambulance transport and the bearers were insufficient in number to cope with the casualties The action was fought in stormy weather and the heavy rains turned the soil into a sea of mud Army transport carts laden with wounded sank to the axles and many of the wounded had to lie out all night When they were collected the tentage accommodation was insufficient and the personnel of the tent divisions were unable to feed or dress them properly These wounded were covered with mud, the majority had no over-coats, and after lying out for some time they were in a very exhausted condition, many dying from exposure It is impossible to imagine worse conditions, and never in the whole experience of the campaign had such conditions been prevalent or the sufferings of the wounded greater " 91

" At 2 p m on the 22nd January a paddle steamer was sent down with 6 British Officers, 186 British Other Ranks, 12 Indian officers and 726 other ranks—a total of 930 Many of these cases were slightly wounded The medical personnel consisted of an improvised section of the field ambulance Rations were put on board, but in the absence of a proper number of cooks they were not used The remainder of the wounded were evacuated on three other paddle steamers There were no beds on these steamers, the boats were overcrowded, the nursing and cooking personnel were few It was simply a case of getting all downstream as quickly as possible The total number of wounded cleared and evacuated was thirty British officers and 1,876 British and Indian rank and file " 92

After the battle of Hanna the Tigris Corps remained at Ora Camp where the 3rd and 7th Divisions were gradually brought up to strength and were joined by their own medical units

Conditions on the Lines of Communication at that time were little better At Basra " so great was the shortage of all personnel that even dhobies (washermen) and tailors were employed on ward duties "

By the beginning of January, 1916, matters improved with the belated arrival of the medical units of the Indian Contingents from France, together with the "Secunderabad" I G H , a section of the B G H and the "Meerut" Stationary Hospital This arrival was little short of a godsend to the distracted medical authorities

After a period of recovery and reorganisation the advance continued during February and March Conditions as regards medical arrangements had undoubtedly

improved with the arrival of the medical units from France well-equipped with dressings and medical comforts, but

“ the lack of modern ambulance transport necessitated the placing of serious cases, such as head wounds, thoracic wounds, abdominal wounds and men with fractured thighs, on rough, springless transport vehicles. The sufferings experienced by the wounded must have been extreme and are beyond description. The weather at that time was very warm and although arrangements had been made for a small supply of drinking water, this was totally inadequate, and the lack of water added not only to the misery of the wounded, but to the discomfort of the fighting troops ” 93

“ During the operations a serious outbreak of cholera spread to the 3rd, 7th and 13th Divisions and, unfortunately, no preparations to combat this disease had been made. The troops suffered from lack of rations, unsuitable clothing and an inadequate supply of pure water. The majority of units had no water-carts. Improvised tanks had to be made from tarpaulins which soon became worn out and were not easily replaced. There was no method of sterilizing water in bulk and there is no doubt that the unfiltered and improperly sterilized water was responsible for a great number of cases of sickness more especially of colitis and diarrhoea. The rations were scanty, fuel was short, and what there was was difficult to convey to the troops ” 94

There is, however, little point in a work of this kind in elaborating further the tale of official muddlings which were the subject of enquiries by the Vincent-Bingley Commission and by a Medical Advisory Committee appointed by the War Office. The reports of those two bodies, in general, condemned the medical arrangements, while the official historian passes this judgement on the position at that time —

“ Failures in the medical arrangements were not due to lack of organising ability so much as to the general shortage of units, equipment and transport from which the force as a whole suffered. Medical units had to be split up into detachments, improvised casualty clearing stations had to be formed by them, the wounded had to be evacuated in any vehicle that was obtainable, the river vessels had not been properly organised, and personnel and a great deal of equipment for these river steamers had to be provided by the field medical units. The sick and wounded, however, were better treated, more carefully looked after and more easily evacuated than on the previous advance up the Tigris. The hospital ship “ *Sikkim* ” arrived at Ora in the latter part of April, and while assisting to evacuate the British sick and wounded from the relieving force, also served a useful purpose in evacuating the sick and wounded repatriated prisoners of war from Kut ” 95

In charge of the medical administration of the advance on Kut, as P M O of General Townshend's force, was a remarkable man—Colonel Patrick Hehir, I M S (subsequently Major-General). Sir Patrick Hehir was the only officer who rose from the subordinate service, which he entered in 1882, to the highest commissioned rank. As a professional man he possessed the qualifications of M D and D Ch (Brux), F R C S (Ed), F R C P (Ed). As an administrator he proved his ability in Mesopotamia and, later, as Surgeon-General in India. His war service was considerable and extended from the Burma Campaigns of 1886 to operations on the N W Frontier in 1919. He was, in addition, the author of numerous works on professional subjects, especially on sanitation. Sir Patrick was honoured with the C B 1915, the C M G 1917, C I E 1918, K C I E 1920. He retired in 1919 and died on the 1st May, 1937.

The story of the siege of Kut must be familiar to most of us and it is not proposed to describe it here. Besides the official history there are many more popular accounts to be read, among others, Dorina Neave's "Remembering Kut," a moving book which well preserves the memory of that heroic episode.

Eventually, on 29th April, 1916, Kut was compelled to surrender and Lieut-General Sir Percy Lake arranged with the Turkish Commander-in-Chief that the more serious cases among the sick and wounded of the garrison at Kut should be exchanged for an equal number of Turkish prisoners of war.

The remainder went into captivity in spite of General Townshend's despairing attempt to bribe the Turkish Minister of War, Enver Pasha, with one million pounds in exchange for their release on parole, and a further attempt by Aubrey Herbert to persuade Khalil Pasha, the Turkish Commander-in-Chief, to accept double that sum. For Enver no bribe could equal the satisfaction he hoped to experience from marching his captives through two thousand miles of desert as a raree-show for the local inhabitants of Mesopotamia and Anatolia. Into this captivity went nineteen members of the Indian Medical Service —

Captain L A P Anderson, Major (Bt Lieut-Colonel) Sam Anderson, Captain D Arthur, Lieutenant N K Bal, Major C H Barber, Captain R C Clifford, Lieutenant A Y Dabholkar, Captain S C Haughton, Colonel Patrick Hehir, C B, Captain H H King, Captain J S S Martin, Lieutenant R V Martin, Captain K K Mukerjee, Captain C Newcomb, Major D MacM Pearson, Captain M L Puri, Captain F H Salisbury, Lieutenant W C Spackman, and Temporary Lieutenant N R R Ubhaya.

Several officers who were able to escape have given accounts of their extraordinary adventures. Among these may be mentioned "On the Road to Endor," by Captain E H Jones, and "Four-fifty miles to Freedom," by Captain Johnstone and Captain Yearsley.

In those books may be found accounts of the faked séances which led to the discovery of parcels which had arrived for prisoners and had been appropriated by their guards and even by the commandant himself, of how the commandant desired the help of the spirits to recover the jewels hidden by the Armenians before their massacre, of how Jones and Hill feigned madness so successfully that they deceived even their brother officers, of how Commander Cochrane, R N (later Governor of Burma), piloted his escaping party over the seas of the desert sand and then, jumping overboard from a stolen launch, clad only in his shirt and a straw hat, swam ashore to find that he had arrived at Cyprus.

Captain James Jones, of the I M S, the brother of E H Jones, was awarded the D S O during this campaign after being recommended for the V C. He tackled a corporal of the Black Watch, a Highlander of enormous strength, who had gone mad and was rushing down a trench with a bomb in each hand. He was able to seize the bombs from the madman and throw them over the parapet, thereby preventing the loss of several lives.

At the beginning of May, 1916, Surgeon-General I. H. Treherne arrived from France, as D.M.S. of the Mesopotamia Expeditionary Force and a general clean-up and reorganisation of the medical administration was instituted. An Advisory Committee appointed by the War Office reviewed the position regarding sanitation and, as a result of these activities, it was possible to record "steady, continuous progress at the base and throughout the force."

On 28th August, 1916, Sir Stanley Maude assumed command of the army in Mesopotamia with responsibilities which, at that time, included locations on the Tigris, Nasariya on the Euphrates, Bushire on the Persian Gulf, and extended as far as Isfahan in Persia. Great changes and improvements had by then been effected not only in medical administration but also in the general organisation of the Army. On 13th December, heralded by a heavy bombardment of the enemy positions at Sanna-i-Yat, the advance to Baghdad commenced. Numerous Field Ambulances were now available, well equipped and supplied, two Casualty Clearing stations were in readiness, two Consulting Surgeons and two Consulting Physicians had been detailed for duty at the front, adequate arrangements had been made for transport by land and river, and a very large reserve of medical comforts had been assembled at Shaikh Saad.

After heavy fighting in the neighbourhood of Kut during January and February, 1917, the Tigris was crossed on 22nd and 23rd February, Kut itself, which had been deserted by the enemy, was re-occupied, and the pursuit continued up the river to Baghdad which fell to our arms on 11th March, 1917. During this advance the medical arrangements ran on oiled wheels, and no less than 30,675 casualties, sick and wounded, were handled between 16th February and 11th March.

Extensive accommodation for hospital cases was provided in Baghdad, and, in addition to hospitals for British troops, Nos. 61 and 70 Indian Stationary Hospitals opened in that city. At that time there were, also, four Indian General Hospitals at Amara—Nos. 12, 21, 23 and 42—and eight at Basra—Nos. 8, 9, 10, 20, 22, 24, 25 and 27. During the period from December, 1916, to September, 1917 No. 23 M.A.C. transported 80,577 patients over approximately 197,144 miles while, during the same period, 49,571 sick and wounded were evacuated to India, of whom 30,587 were Indians.

During 1918 "all hospitals were made as perfect as possible and were supplied with every mechanical appliance and device that could assist in adding to the comfort of the sick and wounded." These sick and wounded were evacuated downstream in the greatest comfort, and during May to December of that year, 21,690 sick (including 12,139 Indians) were transferred from up-river stations to Basra, while 21,969 were evacuated to India, of whom 15,343 were Indians.

Early in 1918 a mission under Major-General L. C. Dunsterville, known as "Dunsterforce" was sent from Mesopotamia to Persia. This adventurous force travelled 700 miles from railhead over non-metalled roads and through rocky passes up to 7,000 feet to reach Enzeli on the Caspian Sea. Unfortunately, as Indian troops

played only a small part in this expedition, its adventures cannot detain us here. Later, out of this force, in September, 1918, was organised the North Persian Force.

Operations continued in Upper Mesopotamia, after the capture of Baghdad, but these, according to the official historian,

“are chiefly of interest on account of the vast area involved. Casualties were never numerous, but, on the other hand, the medical service was called upon to deal with great numbers of debilitated and sick prisoners of war. They usually found these sick prisoners in a very insanitary condition, and this constituted a danger to the British troops. Much valuable experience was gained. Without motor transport the evacuation of the sick and wounded would have been extremely difficult. Field ambulances had to form rest stations along the road. Little or nothing could be done, however, to carry out operative treatment on the seriously wounded.” 96

In speaking of the method of dealing with casualties after one of these actions he says that, in spite of all that had been done to improve matters —

“As an example of how cases can be evacuated from a field of battle situated thirty miles from the nearest casualty clearing station, this action stands out pre-eminently, but when 1,800 wounded have been cleared from the battlefield in the way described it is obvious that, with the medical units at the disposal of the force, the treatment carried out could not reach the standard of treatment with the British Expeditionary Force in France. In the reports relating to these operations there is no record of the use of any units such as the surgical teams employed in France, the surgical groups in Macedonia, or the mobile surgical units employed in Palestine, where the difficulties in transporting wounded were equally great and where it was found that such units, if carefully organised and well trained, could be attached to field ambulances and ensure for the wounded efficient treatment.” 97

The above notes, which attempt to depict the often almost insuperable difficulties with which the men charged with treating the sick and wounded had to contend during these operations, may well end with the poignant words of Brig -General A. G. Wauchope, quoted in the official history from *Blackwood's Magazine* of April, 1918, as showing desert warfare through the eyes of a wounded soldier —

“Surely the world offers no scene more pitiful than that of a battlefield after action. I know, by personal experience, the suffering entailed in lying day and night untended with broken limbs, the utter weariness from wounds, and the exhaustion after conflict—the tragedy of all surroundings, the cries of those who cry for help that never comes, a passionate longing for death alternating with a craven fear of foe and wandering marauder, and, above all, the horror of the great vultures swinging round and round in ever closer circles.” 98

During all the operations in Mesopotamia six I M S officers died of wounds—Francis Shingleton Smith, M. B. Patel, Alister Ralph Spiers-Alexander, Charles Stiebel, Darabochi Rustomji Kharas, and Atul Krishna Sinha.

One other, John Walter Pigeon, was killed at Samanah, Mesopotamia, on 3rd September, 1920.

EAST AFRICA

For Germany East Africa was the greatest of her colonies, and much energy and money had been put into its development. This country of unrivalled scenery,

of trackless forests, of great mountains and unbridged rivers, infested with mosquitoes and tsetse flies, in the rains largely becoming a swamp, and in the fierce heat of the summer a breeding place for all forms of tropical diseases, offered many conundrums not only to the medical administration, but also to the Army engaged therein under the distinguished command of General Smuts—an army which he himself described as “ drawn from almost every continent and speaking a babel of languages ”

The forces operating during 1914 were chiefly Indian troops. Gradually others were raised locally, while reinforcements came from South Africa, from India, from the U K and elsewhere. At first consisting of one division, it had extended to two by the time that General Smuts took over command in early 1916. Facing them was an enemy resourceful and brilliantly led.

In February, 1915, we note that an I G H, equipped for 300 patients, and three Indian Field Ambulances were with the force, together with No. 6 Combined General Hospital, which was later established at Nairobi, with 300 beds for Indian patients.

In 1916 we read the familiar tale of “ difficulties ”. Preparations had been made for an offensive operation, but the motor ambulance convoy asked for was still on the high seas. Ambulances arrived in advance of their transport. Reinforcements of subordinate medical personnel from India were difficult to obtain. Sanitary sections promised by the War Office had not yet arrived. Nevertheless an advance began in the Kilimanjaro district on the 9th March and continued through sun, rain and cold. Rations at times ran short. Long marches in the hot sun and occasional drenching rains told heavily on the troops which had been in the field since November, 1914. By the end of March Headquarters were established at Moschi, reinforcements had arrived and the force was reorganised. By the middle of April torrential rains poured down through the whole area of operations of the 2nd Division, and the story is one of slogging along with few battle casualties, and many sick.

“ The actual numbers of sick admitted to hospital during this period are not available, but it is known that at this time the 2nd Division was so reduced by sickness, due to lack of food, that it could hardly count on three thousand rifles. The medical units attached to the division were equipped for only 250 patients, and with efficient evacuation this shortage of equipment would not have been a serious matter, but in this force, with its limited evacuation arrangements, it was keenly felt. The troops themselves had not sufficient covering, either of tentage or blankets, and in the circumstances further supplies were not obtainable ” 99

With the cessation of the rains in May, conditions improved, but, partially due to the nature of the terrain, partially to a lack of system and partially to sheer official inertia, “ difficulties ” were still very much in evidence. The sick-rate continued to increase and, in August, 1916, the A D M S was forced to submit to the G O C of the 2nd Division a report stating “ that the majority of the fighting troops were in need of rest and change to a more salubrious climate, being debilitated by continuous marching, road-making, drift-making, fighting and lack of food, and by malaria and dysentery ”

The tasks of the 1st and 3rd Divisions were equally formidable. “ An examina-

tion showed that 17 per cent were suffering from enlarged spleen and anæmia, and, in addition, 30 per cent were unfit for hard work on account of debility caused by the recent exertion and under-feeding. The men's clothing was torn to ribbons, and their mosquito nets had long been discarded."

"As the advance continued the five field ambulance sections originally with the 1st Division were reduced to four, and the A D M S sent an urgent request to medical headquarters for some lines of communication medical units to relieve the divisional field ambulances as these were unable to cope with the many casualties. Furthermore, the bad roads and heavy rains interfered with the evacuation of wounded from the front line and delayed evacuation on the main lines of communication route from Handeni to Korogwe. At Turiani too, there was some delay. The bridge had broken down, and motor ambulance cars could not leave the town to clear the casualties from the field ambulances. During these operations it became evident that both mechanical and animal-driven transport would have to be dispensed with and the patients carried by porters. Large numbers of porters were engaged and employed solely for this purpose. There was, however, a shortage of hammocks for carrying the sick, and, further sufficient medical personnel and equipment could not be spared for treating porters who fell sick." 100

During this early part of the campaign it is evident that the idea prevailing with the Army Command was the defeat of the enemy regardless of the cost in wastage from sickness, and this wastage ran very high. The actual number of the total force which were sick in hospital in May, 1916, was 4,500, rising in early December, after six months of campaigning, to 10,600. Casualties from wounds, on the other hand, were relatively few.

The operations in East Africa, though the forces engaged were less numerous than in most of the other theatres of war, were carried out for the most part under conditions so arduous, and of such discomfort and difficulty, that a maximum strain was put upon the troops. Occasions were few in which they could relax and, indeed, we find them again about to advance on 26th December, 1916, on the Mgeta front, but held up by continuous rain until the 31st, while the 2nd Division in the Iringa area, though not troubled by rain, was advancing over mountainous country covered with dense bush. Sickness increased as these advances proceeded, due to long marches, hard fighting, bad weather and short rations, while difficulties in evacuation caused some field ambulances to become so full that they were actually immobile.

On 20th January, General Smuts handed over his command to General Hoskins, and this change coincided with the onset of heavy rains which continued with a violence unparalleled for many years. Supplies and equipment had to be carried by porters often waded deep in water and it sometimes happened that these porters, wading along the flooded roads, were seized by crocodiles. The current in the rivers became too swift even for a powerful motor boat to force its way along and evacuation of casualties had to be by canoes paddled or pulled through the reeds.

During the rainy season there were 38,333 admissions to hospital for disease with 642 deaths, this being an average admission rate of 206 per thousand of strength per month and a death rate of 3.4, out of a force of some 185,000 men, consisting

roughly of 40 per cent European, 25 per cent Indian and 35 per cent East or West African troops

At that time the Army Commander reported that, owing to sickness, and particularly to malaria, a brigade that could muster 1,400 rifles was singularly fortunate. However, two extra field ambulances were on their way, one from India and another from England, each with four sections, together with an additional clearing hospital of four sections from India. An improved system of evacuation of casualties to the General Hospitals at Dar-es-Salaam was evolved, and medical arrangements on the whole worked more satisfactorily during the rest of the campaign.

The above notes give some idea of the conditions under which the medical services had to carry on work in East Africa. It is unnecessary to elaborate here the details of the advance which thereafter led to the gradual eradication of the enemy. The story of how the Germans were driven into Portuguese East Africa, and how they were pursued all over the country, at an average rate of eighteen miles a day for many days at a time, one battalion actually covering 1,000 miles in ninety-seven days, until 12th November, 1918, when General Von Letton Vorbeck decided to surrender, is easily accessible to any who wish to peruse it.

This whole campaign, which the official historian described as unique in civilised war, in that it was one of virtual extermination, was tough going all the way and made great demands on all concerned. The lion's share of the medical work fell to the R A M C but the I M S were well represented. In 1917, the medical units could provide accommodation for 4,080 British and 1,835 Indian troops, besides beds required for African troops and carriers. The historian, in his summing up of this section, gives it as his opinion that probably in no previous campaign in the tropics had so many sick and wounded to be evacuated from front lines under such difficult conditions.

During these operations no officer of the I M S lost his life.

In addition to the officers enumerated above, who died of wounds in the various campaigns of this war, one officer—Edwin Francis Horatio Dobson (retired)—was lost in the S S *Hirano Maru*, torpedoed off the North Coast of Ireland on 5th October, 1918, and the following died of sickness while on active service—

Blenman Buhot Grayfoot, Pulteney Charles Gabbett, James Henry Horton, Edward Lawrie, Arthur Henry Moorhead, Alfred George Sargent, John O'Leary, Thomas Corrie Rutherford, David Arthur, Rustam Hormasji Bharucha, Robert Inglis Binning, Robert Francis Hebbert, George Staunton Husband, Andrew Monro Jukes, Kalyan Kumar Mukerji, Lakshminaraynapuram Subramaniam Ramier, Mysore Seshagiri Rao Krishnaswami Rao, Sorab Dhunjibhoy Ratnagar, John Gailey Tackaberry, John Dow, Gustadji Shapurji Engineer, Kalyanpur Harihair-Bhat, Thomas Bond Paul, and Puhuzhi Raghava Wariyar.

Honours bestowed upon the Service, during these years, included the following

One V C (John Alexander Sinton, the citation of whose act of valour is placed later in this story), seven C B, twenty-three C M G, one C S I, twenty-five C I E, three C B E, twenty-eight O B E, forty-six D S O, and fifty-one M C.

Numerous officers were mentioned in despatches and many shared in the distribution of orders and decorations presented by foreign potentates

The *London Gazette* of 2nd March, 1915, recorded a unique event in the history of the I M S

“ The King has approved of the Grant of temporary rank in the Indian Medical Service to the undermentioned—

“ To be Major —Colonel G F Rowcroft, D S O , Indian Army Retired (January 8th) ”

Colonel Rowcroft, formerly Commandant of the 15th Sikhs, had, on his retirement from the Army, taken up the study of medicine and qualified in 1915 at the age of 54. He was, at the time of the gazette, employed on the staff of the Convalescent Home for Indian Wounded at New Milford, in Hants

On the outbreak of war admission to the Service by competitive examination officially ceased, though one belated examination was held in 1915 for seven vacancies. Since then all appointments have been by nomination, and, for a period after the First Great War, all officers who were so nominated were men who had served as medical officers with the armed forces. Later, a certain number of combatants in the war, who had subsequently taken up medicine, were given commissions in the I M S

By an order of 30th June, 1916, the President of the Medical Board, India Office, was appointed as Medical Adviser to the Secretary of State for India in addition, with the special duty of supervising recruitment for the Service

It is interesting to record that the first Indian member of the Service to reach permanent administrative rank was Hormusjee Eduljee Banatvala, who was appointed Inspector-General of Civil Hospitals, Assam, in 1914. He retired in 1919 but continued in employment as Inspector-General of Jails in Bombay, 1919, Burma, 1920, and Bihar, 1921. He received the C S I in 1917 and the honour of knighthood in June, 1920. He died on 1st July, 1932, at the age of seventy-two

1918-1939—THE DECISIVE YEARS

I ADMINISTRATION (102)

The orders passed by Lord Morley on 11th December, 1908, that there should be no further civil appointments given to the Indian Medical Service, that that Service should be correspondingly reduced, and that those appointments should be thrown open to the whole medical profession in India were agreed to by the Government of India. The papers were published in 1909 and that event was naturally followed by a slump in recruitment. Government then dropped the proposal, moved especially by the fact that Provincial Governments did not approve of the idea

In 1911 yet another proposal was put forward that the I M S should be made

a purely civil service, with all military needs met by the R A M C, which was then in a flourishing condition. It was felt, also, that the large number of Indians entering the I M S about that time could be more advantageously employed on the civil side. It was pointed out, however, by Sir Pardee Lukis (Director-General) that, if this were to be done, the war reserve, which up till then had consisted of 326 men whom the Army could hardly dispense with, would disappear. That officer considered that "with all the glamour of military rank and titles taken away, is it conceivable that good men will come to India to struggle for a pittance with the ever-increasing tide of Indians, except on condition that they receive far higher pay than they do at present?" The proposal was dropped, but the popularity of the Service continued to decline until, in 1914, only thirty-nine candidates appeared for thirty-five appointments.

In September, 1913, the Secretary of State, who had become extremely worried by the drying up of the supply of British medical officers, called in the assistance of the British Medical Association in an attempt to ascertain the reason. That Body submitted a memorandum to the Public Service Commission which sat in London in 1914. They pointed out quite candidly that the state of affairs was entirely the fault of Government and that a point had been reached when officers already in the Service had felt compelled to recommend the boycotting of the entrance examination to their own Service. The chief grievances were inadequate pay, the difficulty in obtaining leave, the constant interference by Government in private practice, and the impossible position of the Director-General and the Surgeon-General in their relations with the Government of India and with local governments.

The Commission recommended that there should be separate assessments of the civil and military needs of the country for doctors, and that the idea that the civil needs should be met by a military reserve should be abandoned. Instead, a purely civil machinery should be created to meet all civil requirements, and officers who formed part of the military reserve should be admitted to the civil cadres so formed. They recommended that no officer of the I M S, of more than five years' standing should normally be admitted to the Indian Civil Medical Service. In view of the fact that the incomes of doctors in the U K had tended to rise, they recommended a general increase in pay of 12½ per cent in order to secure a suitable field of candidates.

Government did not at once accept this last recommendation and the British Medical Association felt it was necessary to draw its attention once again to the dilemma which might threaten to become serious unless some action, and that quickly, was taken to remedy the grievances of which the officers complained. Sir Cliford Allbutt and Sir Berkeley Moynihan added the great weight of their special recommendations, and the Secretary of State, eventually laid down four principles which were to govern conditions of service in the I M S —

"(1) *That an Indian Medical Service Officer must be assured of suitable opportunities of interesting practice.* The service must be worth his while professionally and scientifically. He believed that

there was no country in the world professionally more attractive than India and that therefore the opportunities that the country afforded must be at the disposal of members of the service. The application of this principle would make it impossible, or at any rate difficult, to separate the military side of the Indian Medical Service from the civil side. It appeared to him that neither the military side nor the civil side alone would fulfil the principle. It would be definitely contrary to it to deprive members of the Indian Medical Service of their opportunities of private practice. With regard to the welfare of the people of India and the desirability of developing an indigenous private medical profession, it seemed to him better in every way that such an indigenous profession should grow up in an atmosphere of free competition with highly trained European doctors. Competition of this kind set a high standard, and would consequently encourage and maintain a strong connection with western medical schools and methods,

“ (2) *that remuneration must be adequate and that the cadre of the service must provide for an adequate leave reserve,*

“ (3) *that the Indian Medical Service must afford in its organisation increased and increasing opportunities for Indians to enter the service.* This was essential if the service was to continue to remain firmly established in the respect of the peoples of India. The assertion of this principle was not intended to detract from the necessity of keeping an adequate proportion of officers from England, both to supply the needs of the European services and to maintain the traditions of the Indian Medical Service.

“ (4) *Conditions of service should be as free as possible from friction, irritation and annoyance.* It did not seem to him possible that with two services, the relations between which are so intimate as they were between the Indian Medical Service and the Royal Army Medical Corps, friction could be avoided ”

These principles were set forth in a Secretary of State's despatch No 56 Military of 11th October, 1918, and pay for the I M S was increased by 33½ per cent. Moreover, the Government of India appointed a Committee (the Verney Lovatt Committee), with the special duty of examining the question of the reorganisation of the Service from the standpoint that there should be one unified Medical Service in India. This Committee commenced its sittings in January, 1919, and issued its report in April of the same year.

Before proceeding to examine the recommendation of that Committee it is necessary to record that, in the previous year (1918), the decision was made to abolish the old regimental system, and the issue of an Army Instruction, India, 1343/1918, gave sanction for the establishment of Indian Military Hospitals similar to those which had been set up for the British Army in 1874. The survival of the regimental system, however pleasant it may have been for the individual doctor to feel that he had a share in the life and traditions of the regiment of which he was an officer, had become an anachronism, and as Crawford remarks “ Modern progress, like the car of Jagannath, passes relentlessly over all that stands in the way of efficiency ” The change had been under discussion since 1910 but, at that time, the Finance Department were not prepared to sacrifice economy to increased efficiency and nothing really practical was undertaken though, by 1912, a compromise in the form of “ combined ” hospitals had been introduced in some fifty cantonments. These were, indeed, far behind station hospitals in administration and equipment, but an advance had been made.

In 1918, also, was published the Report of the Montague Committee on Reforms by which administration passed largely into the hands of the Indian Council of State and the Legislative Assembly, medicine being classified as a transferred subject

To return to the Verney Lovatt Committee That body advised against the separation of the civil side of the Service from the military, and recommended that an Indian Medical Corps should be formed to take the place of both the I M S and the R A M C There was still to be a War Reserve of officers lent to civil administrations for five years or less, pay was to be increased and leave made certain by the maintaining of larger reserves

The heads of the R A M C (Lieut -General O'Donnell and Lieut -General Burtchaeff) strongly objected to the extermination of the R A M C., and pointed out that what was really required was for the I M S to put its house in order or, alternatively, that there should be founded two new bodies—an R A.M C. (India) and a separate Imperial Indian Medical Service, which should be purely civil and independent of the Army

The Director-General, Indian Medical Service (Major-General Edwards) did not agree He pointed out that the I M S had not been responsible for the breakdown in administration in the First Great War, as it had never had a Director of Medical Services of its own He considered that the constitution of only one corps, to serve both British and Indian regiments and hospitals, would lead to endless trouble and dispute both regarding admissions to that corps and also regarding postings After putting forward many other extremely apposite arguments, General Edwards gave it as his opinion that the only practical solution was that the I M S should take over the whole of the military medical service in India He saw no reason why a Corps organised on similar lines to the R A M C should not take over medical charge of the British Army in India

Meanwhile Lord Esher's Committee had produced their report on the Army in India That Committee had considered the Verney Lovatt Committee's report, but had been unable to accept their proposal for the unification of the two services They held that it was the double role of the I M S—civil and military—that had given rise to the practical difficulties blocking any attempt to create a unified service The main difficulties presented were, as they saw them.—

1 The fact that in any Indian Medical Service there must be room for a growing number of Indian doctors

2 That a military career in India was not in itself sufficient to attract the best doctors, and that it was very difficult from the medical point of view to separate the needs of the civil official population from the needs of the Army

On these grounds the Esher Committee considered that any scheme to amalgamate the two services would be impracticable They held that there was no inherent objection to maintaining two medical services so long as there were two armies to be served They made proposals designed to enable the I.M S to

maintain its position as the premier medical service in India, and also to secure a more harmonious working and closer co-operation between that service and the R A M C

Their major recommendations were —

- 1 Preliminary training with the R A M C at Millbank
- 2 Definition of the categories of the War Reserve
- 3 Pay and Pension of the I M S to be on a higher grade than those of the R A M C
- 4 The proportion of Indians to be recruited should, if fixed, be maintained in both the military and civil branches
- 5 An interchange of duties between the two services to be encouraged
- 6 The alternate holding by the two services of the office of Director of Medical Services

The last of these removed a long-felt grievance and was in every way a fair decision. Officers of the I M S had, indeed, since 1851, been eligible for the appointment of Director of Medical Services in India, but in actual fact no I M S officer had ever been selected until the appointment under this new ruling, in September, 1923, of Major-General C H Bowle-Evans. It was unfortunate that, owing to ill-health, General Bowle-Evans was only able to hold office for three months. He was succeeded by a British Service officer, who in turn, in January, 1927, was succeeded by Major-General Sir W H Ogilvie of the I M S.

On the strength of these recommendations a lengthy despatch passed from the Government of India to the Secretary of State, in the course of which it was recommended that the percentage of Indians should be not less than 40 per cent of the vacancies in any one year. That letter never received a complete reply from the Secretary of State, and the question of amalgamation of the military services was left entirely untouched.

In view of the fact that medicine had become a transferred subject under the new Reforms of the Public Services, considerable discussion took place as to the proper strength of the service in civil employ. This was, for the time being, settled by a despatch from the Secretary of State, No 21 of 31st May, 1923, in which it was agreed that special posts should be reserved.

In the meanwhile yet another Body—the Lee Commission—was concluding its deliberations. Its report appeared in 1924 as the “Report of the Royal Commission on the Superior Services in India.” This Committee rejected the solution proposed by the Verney Lovatt Committee and, harking back to the Burtchaeil Scheme, recommended that

- (a) while all concessions granted to other all-India Services should be extended to the existing members of the I M S in civil employ, no attempt should be made to perpetuate that service as then constituted,
- (b) contrary to the recommendations of the Verney Lovatt Committee that the I M S should be developed into a new Indian Medical Corps, which should absorb the R A M C, the medical needs of both British and Indian troops in India should be provided by the R A M C (India), which should absorb the I M S

On the strength of the above scheme the constitution was proposed, in each province, of a Civil Medical Service, every officer of which should be liable for military service in the event of general mobilisation, and that one-half of the British element in the Civil Medical Services, or a number not less than the requirements of the War reserve, whichever was larger, should be reserved for British officers seconded from the R A M.C (India), the remainder being obtained by competitive examination in England and in India

The War Office, which was once more in difficulties regarding recruitment for the R A M C., agreed to amalgamation but opposed the Burtchaeil Scheme. The British Medical Association were perturbed over the medical findings of the Lee Commission and said so. The ball rolled on and, on 26th May, 1925, we find the Government of India addressing the Secretary of State to say that they had now decided to reject the idea of a unified medical service, a decision with which the Secretary of State was in hearty agreement.

In 1928 a Communiqué dated 10th May was issued regarding the reorganisation of the I M S as a result of the recommendations of the Lee Commission. This stated that the I M S as constituted on the existing lines would be retained, and that 302 I M S officers would be required for civil employment. Various other rules were issued of no interest to our present purpose and all was quiet until 1931, when the Services Sub-Committee of the Indian Round Table Conference presented its report. That Committee had devoted considerable time to protracted discussions regarding the future of the I M S. The answer to this evergreen problem appears once more to have been indefinite, as the objection of Indian opinion to the supply of European medical officers to attend European civilian officials in all cases appeared on the face of it to be not unreasonable, and increasing Indianisation of the service to be both logical and inevitable. The Sub-Committee recommended, in fact, that no civil appointments either under the Government of India or the Provincial Governments should, in future, be listed as reserved for Europeans as such. This proposal, however, was definitely opposed by the Secretary of State, who stated in his letter of 9th March, 1934, that he would require a definite assurance that facilities for attendance on the European officers of the services and their families would be at least as good in the future as in the past.

At this juncture two unexpected developments occurred. One of these was the retrenchment in the services following the sudden financial crisis of 1931, by which the Medical Directorate were ordered to effect economies of 19 lakhs before the next financial year on a budget made up almost entirely of pay and allowances. The net result of this was the withdrawal of fourteen staff appointments, of twenty executive appointments in the R A M C and of thirty seven executive appointments in the I M S.

The second unexpected event was the publication of the report of the Warren-Fisher Committee on the Medical Branches of the Defence Services (British) in July, 1933. This report, which offered improved prospects to the R A M C, was

not at all to the liking of the Government of India who saw in it, if applied to the I M S , a formidable and most unexpected increase in expenditure His Majesty's Government, however, were firmly convinced that acceptance of the report as a whole offered the only possible means of averting the total and immediate collapse of the R A M C , and the Secretary of State insisted on its acceptance also by the Government of India who, for ever procrastinating, agreed as an interim measure to grant promotion to the rank of Captain after only one year's service in the I M S

At this stage the Government of India decided to make one more attempt to put its house in order, and placed an officer (Mr C M G Ogilvie, I C S , later Sir Charles Ogilvie) on special duty to make recommendations for the reorganisation of the medical services That officer completed his report in September, 1934. It was accepted practically entire, and given effect to in Defence Department Resolution No 205 of 25th March, 1937 (Secretary of State rules being framed under Section 246 (1) and 250 (1) of Government of India Act of 1935)

This resolution laid down the following changes in establishments —

1 That the officer strength of the R A M C in India should be limited to 268, and of the I M S to 364 for duty with troops in peace-time Of the 364 I M S officers, 220 at the most will be British and 144 Indian, and of those Indians a number not exceeding 58 will be on short-term commissions

2 The Civil Branch of the I M S will continue to function with not less than 220 officers, of whom 166 will be British and not less than 54 Indian Out of the 220 officers, 97 British and 50 Indian will constitute the War Reserve, while the remainder will not be liable to recall on mobilisation, and will be known as Residuaries Of the 166 British officers, 122 will be employed in the Provinces, the remaining 44 under the Central Government Of the 122 employed by the Provinces, 77 will belong to the War Reserve and will be available in peace-time for attendance on the British members of the superior Civil Service and their families The remaining 45 Residuaries will be available at all times for the same purpose

3 In that way, it was hoped that some of the main difficulties in administering the Service would be met Arrangements were further made for the Indian officers and for the appointments proposed to be reserved in the Provinces, and under the Crown Representative, for Indian Medical Service officers

4 The adoption of the new list of reserved posts involved a net reduction in the number of posts on the civil side reserved for the I M S from 207 to 172

Changes were also made regarding the conditions of Service —

1 Recruitment is to continue by nomination on the recommendation of a Selection Board For Indian members of the Service the normal method of entry will follow the system adopted in the R A M C , new entrants being given short-term commissions for five years and then asked whether they desire permanent commissions

2 The temporary commissions renewable from year to year, which were at

that time being given, were to be discontinued, but holders thereof were to be given an offer of selection for short service, and ultimately permanent commissions.

3 Pay was revised, the time-scale of promotion to Major was accelerated by two years; enhanced pensions were recommended for a number of officers who under the new conditions would, by remaining in civil employment, forego any prospect of military promotion. Further, to equalise the balance between the R.A.M.C. and the I.M.S., six additional Colonelcies were provided for on the military side of the I.M.S.

4 The conditions under which an officer could be posted for service on the civil side were tightened up and clarified.

On 29th March, 1939, Rules were issued by the Secretary of State regarding reserved posts in the Indian Medical Service (Civil). These were issued under Education, Health and Lands Department Notification No. 17-6/39 of 4th May, 1939. Schedules were attached showing (a) the posts which would be filled only by officers of the I.M.S. who were in civil employ (i) in the case of the Second Schedule on 10th May, 1928, and (ii) in the case of the Third Schedule, on 1st April, 1937. The proper procedure for the filling of reserved posts in certain special cases was carefully defined. It appeared as if these rules, taken together with the clearly thought out recommendations of Mr. Ogilvie, had smoothed out a path which the Service could be expected to follow for many years to come.

During the course of the previous eighty years innumerable Committees and Commissions had discussed the problems of the Service and the vexed question of unification, while no less than ten Royal Warrants had been issued (1859, 1864, 1873, 1880, 1887, 1891, 1898, 1903, 1908 and 1913) mostly to correct and improve the conditions of the Service.

The last word in these matters was, indeed, spoken by Mr. Ogilvie in his report (para. 100), as a funeral oration over the grave of the Bogey of Amalgamation.

“The trend of this report and the recommendations already made will have made it clear that any scheme of amalgamation of the Indian Medical Service and Royal Army Medical Corps, any proposal for the creation of a unified military medical service is not regarded as feasible. Such proposals have been made many times, and as has been shown every possible method of amalgamation has been put forward. Sometimes the Royal Army Medical Corps has been favoured as the dominant partner, sometimes it has been the Indian Medical Service which was to absorb the Royal Army Medical Corps. General Edwards and the Government of India in the despatch of November 20th, 1920, supported the method of secondment of Royal Army Medical Corps officers to the Indian Medical Service during their tours of duty in India. Many thousands of pounds have been spent, and an enormous quantity of the valuable time of eminent men ever since 1879, in the endeavour to arrive at a solution of the problems of India's medical services by one or other of the possible amalgamation schemes. The Army in India Committee put forward their scheme in 1879. The Government of India prepared a new one in 1881. In the crisis of 1897 His Majesty's Government reverted to the same idea, and in 1902 Lord Curzon's Government produced a detailed scheme. In 1911 the unification of the military services, and the relegation of the Indian Medical Service to civil employ was again urged. In 1918 the British Medical Association supported unification, and in 1919 the Government of India appointed the Verney Lovatt Committee, which produced

a complete scheme of unification, as the sole remedy for the many troubles which beset the medical services of India. General Burtchaell countered with another scheme, and the Government of India finally in 1920 recommended a third. In 1924 the Lee Commission went back to the Burtchaell scheme. Nothing has ever been done. None of these schemes has ever been tried. It is surely wrong to suppose that the consistent failure for more than half a century to accept the constantly repeated advice to amalgamate was due to laziness or prejudice on the part of the civil and military authorities concerned. It is at any rate *prima facie* more reasonable to conclude that no scheme of unification has ever been accepted because no scheme of unification is in fact feasible, and that the obstacles which rendered the early schemes infructuous are not only still in being, but, having in view the increased and increasingly urgent need for a solution, are even more formidable than they originally were."

2 PROFESSIONAL

In the previous section have been detailed the final stages of that struggle regarding amalgamation which had continued during so great a part of the existence of the Service. The trouble really arose from the fact that the I M S was always required to fill two roles. It had, primarily, to serve the civil administration in an advisory capacity and to attend to the medical needs of the civil population, while at the same time it had to act as a reserve to provide medical officers for duty with the Indian Army in war—a reserve which that Army could hardly afford to deplete.

These combined duties were accomplished, and accomplished well in spite of many difficulties, at a time when there was no one else to do them. However, with the passage of time, an independent indigenous medical profession has come into existence, largely trained by those I M S officers who staffed the medical colleges and schools in India. Many members of this independent profession have obtained special qualifications and have had knowledge and experience of a very high order. Such men have rightly demanded their proper place in the medical life of the country, and as, at the same time, the reforms in the constitution have considerably restricted the privileges and professional scope of the Service, it has been inevitable that a large share in medical practice and educational work should go to the non-service members of the profession. It has been, indeed, with a certain feeling of pride that the officers of the Service have watched this work passing to the men whom they had so well trained to take it over.

With such events occurring it was to be expected that increasing stress should be laid on the fact that the I M S is essentially a military service, and that whereas its officers had previously not only looked after the medical needs of the country, but also performed such non-medical duties as those of Master of the Mint, Superintendent of Jails, Postmaster, Political Agent, Superintendent of Botanical Gardens and Conservator of Forests, it was no longer either necessary or desirable that they should continue to do so. A point had been reached before the outbreak of the First Great War when, out of sanctioned strength of 748 officers, 475 were engaged in civil duties.

The arrangement by which a war reserve of such magnitude was maintained for them in peace-time was eminently satisfactory to the Army authorities. At that

PLATE XIV



SIR WILLIAM RICE EDWARDS

[Facing p 195

time military life had little to offer for a doctor and it was inevitable that the activity, and often the financial profit, to be obtained in a civilian appointment proved more attractive to an enterprising and intelligent youngster than the comparative stagnation of life as a regimental officer—delightful as such a life had always been to a man whose main interest was directed to sport. Such a youngster was apt to look upon his years of military duty as the price which had to be paid before he could enjoy the life which he had joined the Service to obtain.

Things changed somewhat in 1918 when the old regimental system was abolished and the Indian Military Hospitals came into being. For the first time the Army offered a career to a professional doctor and with the gradual, if somewhat grudging, recognition accorded to special training and experience, by the gazetting of specialists in the various branches of medical knowledge, the prospects became increasingly rose for a medical officer who adopted a military career. Good opportunities for study leave on full pay encouraged him to increase his knowledge, and the Army in this way developed for itself an expert and well-qualified specialist staff.

At the same time all was not well with the Service in those days and already the axe was being sharpened that was shortly to be laid to its roots. In the Legislative Council in Delhi in 1918 a motion was brought forward by the Hon. Mr. Sastri to disband the I.M.S., chiefly on the grounds that India was a poor country and could not afford the pay necessary to maintain such a service. The spirited defence put up by Surgeon General W. R. Edwards on that occasion is worthy of being placed on record—

"I need not dwell on the fact that this resolution is tantamount to the abolition of the distinguished service to which I have the honour to belong, but before proceeding with my reply I wish to say a few words concerning the work which has been done by this service in recent years and which is still being done, for I do not think that this Council is fully aware of the extraordinary value of the Indian Medical Service not only to India but to the world at large. I may begin by saying that no less than 34 members of the Indian Medical Service have gained that blue ribbon of the scientific world, the Fellowship of the Royal Society. This service has worked out the life-history of the malarial parasite, a discovery which has revolutionised our ideas concerning malaria and which, among other things has enabled the Panama Canal to be successfully built. It has reduced the mortality of cholera by two thirds and shorn amebic dysentery of most of its terrors. Liver abscess as a consequence is no longer feared. It has worked out the method of transmission of bubonic plague, work which points the way to the ultimate eradication of that disease. Indian Medical Service officers have discovered the cause of relapsing fever and its means of transmission. Enlarged prostate that terrible and fatal concomitant of old age, can now be overcome, thanks to a member of the Indian Medical Service and it was again an Indian Medical Service officer who invented the method of evacuating stone in the bladder by crushing. The work of Indian Medical Service men in the domain of eye surgery, more especially with regard to cataract and glaucoma, is recognised throughout the scientific world. This service discovered the origin of that dread disease kala-azar, which is now no longer incurable. We are carrying out extensive investigations into ankylostomiasis, a disease which is costing India millions of pounds a year and also into bilharziasis which now threatens to invade India. Very important contributions to the knowledge of the world concerning snakes and their venom have been made and are being made by this service. An Indian Medical Service officer is the greatest living authority on goitre. I may also mention

the valuable work done on short fevers and the method of transmission of disease which is of such world-wide importance " 101

It was such a Service that a mediæval-minded body—the General Purposes Sub-Committee on the Retrenchment of the Government of India—appointed in 1931, following the financial crisis of that year, set out to dismember. The outlook of that Committee on the medical problems it was briefed to investigate was so puerile that it could envisage cutting the meagre allowance given to specialist officers, so parochial that it actually considered a cut of two-thirds in the income of so essential a body as the Indian Research Fund Association, and so prejudiced that it actually proposed to dislocate the entire medical organisation by abolishing the posts of Director-General and Public Health Commissioner. These recommendations were supported by the curious argument that because the general health of the troops had greatly improved within recent years, and because the measures necessary to achieve this in their cumulative effect had cost the State many crores of rupees, therefore " we cannot but feel that it is unnecessary to maintain the present high standards of supervision," *i.e.* the standards which, presumably, had allowed the general health of the troops to have so greatly improved! Such reasoning would appear to show an entire lack of any intelligent understanding of the issues involved, comparable only with the customary view of Government that the Medical Services are to be classified as " non-productive " It is true that doctors and research workers do not produce goods with a cash value, they merely save life. Nevertheless, to the individual, that life is above any consideration of price, even though to the bureaucrat it may be worth only what it can produce for a Government to tax. Fortunately, these meddlesome and ill-conceived proposals bore no fruit, and the Service emerged from this encounter, shorn only of some of its lesser branches. 103

As we have previously mentioned, Medical Colleges had been established by Government at Calcutta and at Madras as early as 1835, at Bombay in 1845 and Lahore in 1860 and, though many lesser schools arose to provide training for hospital assistants and sub-assistants surgeons, those four remained for a long time the only centres for higher medical education. It was, in fact, not until 1906 that the need was felt for further extension. By 1939 there were ten University Medical Colleges, including one exclusively for women, established in India. Though the first link between the General Medical Council of the United Kingdom and the Indian Medical Colleges had been forged in 1892, when that Council accepted the degrees of Indian Universities as of sufficiently high standard for inclusion on their register, it was not until 1921 that the Council turned its serious attention to the question of medical education in India. It had become alarmed at the inadequacy of practical teaching in midwifery and passed the following resolutions —

Resolved (1) " That the Executive Committee, having carefully considered the evidence furnished in the replies of the Indian Universities and Colleges to the President's Circular letter of June 8, 1920, set forth in the President's memorandum of December, 1920, regarding the

course of study in midwifery pursued by candidates for Indian Medical Diplomas now registrable in the United Kingdom, and entitling practitioners possessing them to practice midwifery in this country, is not satisfied that such Diplomas under existing conditions furnish 'a sufficient' guarantee of the possession of the requisite knowledge and skill for the efficient practice of midwifery within the meaning of section 13 (1) of the Medical Act, 1886

“(2) That the Executive Committee direct that a copy of the above resolution and of the President's memorandum be sent to each of the Indian Universities on the list contained in the medical register, with the intimation that unless evidence is received by the Executive Committee before the date of its meeting in February, 1922, that their respective arrangements and requirements with regard to midwifery have been brought into satisfactory accordance with the Council's resolutions with reference to professional education, the recognition hitherto accorded to their respective medical diplomas in pursuance of the above-mentioned section of the Medical Act, 1886, will forthwith thereafter terminate ”

The effect of these resolutions was that if, by the 22nd February, 1922, the Indian Universities had not satisfied the Council that its requirements, especially as regards the teaching of midwifery, had been complied with, the Medical degrees of Indian Universities would be no longer recognised for practice in Great Britain and doctors who would thereafter qualify at Indian Universities would be unable to proceed to Great Britain for post-graduate study, or even be eligible for entrance into the I M S

The first instinct of those affected, after hinting openly that they saw behind these events the sinister influence of the Government of India, and especially of the I M S , was to declare war upon the General Medical Council and threaten reprisals. Eventually wiser counsels prevailed with the realisation that all was not well, that the G M C were correct in their attitude and that the responsibility of that body was primarily to the British Parliament to maintain the standard of education for those who wished to practise medicine in Great Britain, so that the repercussions of their decision on Indian education would be unlikely to interest them to any large extent

Sir Norman Walker, at that time Chairman of the Examination Committee of the G M C , went to India to make investigations on the spot. As a result of his visit a system of inspections was set up, Brevet Colonel (later Sir Richard) Needham, I M S , being appointed for visiting, inspecting and reporting on the various medical teaching institutions with a view to their recognition by the Council. As a result of Colonel Needham's reports, recognition was given to various universities for varying periods. The only University to resent this treatment was that of Calcutta which, for two years, refused permission to the Inspector of the G M C to inspect its medical examinations with the inevitable result that the Council refused to recognise the medical degrees of that University during this period. Apparently realising that this attitude led them nowhere, the University, in 1926, again asked for inspection and for their graduates to be restored to the register

In the following cold weather, Sir Norman Walker again visited India on behalf of the G M C and reported to the Secretary of State on the medical colleges

and associated hospitals of several Indian Universities. He toured India with Colonel Needham and satisfied himself that in all universities but one there had been progress since his previous visit.

Sir Norman pointed out in his report that, previous to the reforms, Government alone were responsible for medical education which was carried out by the officers of the I M S and gave it as his opinion "that it is as good as it is, and in many respects it is excellent, is almost entirely due to the zeal, energy and versatility of that Service," but under the reforms medical education had become a provincial subject and men whose teaching experience had been small and whose training as teachers had been brief were appointed to professorships.

Though he found much to praise, he criticised the unevenness of medical education and the absence of a co-ordinating authority between the universities. There was, he considered, an urgent need for a body comparable to the G M C with which that Council could communicate. Pending the setting up of such a body he suggested the appointment of a Commissioner of medical qualifications who would act as a visitor on behalf of the Council and report to them at regular intervals. Colonel Needham was appointed as Visitor, and the inspections continued until the autumn of 1929, when, notwithstanding repeated warning as to the consequences of their action, the Standing Finance Committee refused the grant required for implementing the inspections. The G M C, having in that way been deprived of any evidence on which they could base their decisions, had no alternative but to refuse recognition to the graduates of all Indian Universities after February, 1930. The Government of India, firmly impaled upon the horns of this dilemma onto which its financial advisers had thrust it, sought ways and means, both possible and impossible, of extricating itself. The G M C, however, remained adamant, and after some preliminary difficulty in overcoming various inter-provincial jealousies and misconceptions, an Indian Medical Council Act was produced, which was passed in the autumn of 1933, the G M C sending out Dr Farquhar Macrae, who had had great experience in reporting on education and on examinations, as Secretary of the newly-formed Council.

In accordance with the powers granted to it, the new Council made a series of inspections of all the Indian Medical Colleges during the years 1934-37 and accepted their medical qualifications for inclusion on the First Schedule of the Act.

Although women have never been incorporated in the permanent cadre of the I M S, it is felt that, in view of the gradually increasing share that they are taking in the general task, mention must be made of the establishment of the Women's Medical Service for India.

The first effort to supply women doctors for the women of India was made by the Countess of Dufferin who personally drew the attention of Queen Victoria to this urgent need, with the result that in 1885 there was established a National Association for supplying the necessary aid. A fund was also founded bearing the

name of the " Countess of Dufferin Fund " for granting scholarships and establishing and maintaining hospitals and dispensaries This Association did invaluable work but its income proved so limited that, in order to extend its scope, a representation was made to the Secretary of State, with the result that in 1913 a subsidy of Rs 1,50,000 (roughly £10,000) was granted by the Government of India for the purpose of establishing a Women's Medical Service in India The Service started in 1914 with a cadre of twenty-five members Both the grant and the cadre have gradually increased and, in 1925, a Women's Medical Service Training Reserve was organised By 1936 the cadre consisted of forty-five members, a large number of whom were engaged in educational work, the services of nine being given to the Lady Hardinge Medical College at Delhi, four to the Women's Medical School at Agra and one to the Medical School at Madras One member of the Training Reserve was awarded a fellowship by the Rockefeller Foundation in 1935, and on return, in 1936, was given employment at the All-India Institute of Hygiene, Calcutta

This service is very much alive and will undoubtedly play an important part in the future of Indian Medicine

Organised Medical Research in India dates from 1894 when proposals were first put forward for the establishment of a research institute, but it was during the present century that the bulk of the work was done which permitted Indian research workers to take their place in the front rank and, in fact, often to lead in this most important branch of human knowledge Before the full development of a system of Central and Provincial Laboratories, steps were taken to establish institutes for the provision of Pasteur treatment, at Kasauli 1900, Coonoor 1907, Rangoon 1915 and Shillong 1917 These institutions also undertook general laboratory work In 1906 a Central Research Institute was opened at Kasauli which has remained the leading factor in this branch of medicine In 1921, through the indefatigable efforts of Sir Leonard Rogers, a school of Tropical Medicine was opened at Calcutta Attached to this is a Research Hospital and the School is, therefore, able to combine teaching with research into tropical diseases

As the public became more and more alive to the importance of Public Health, the necessity for the establishment of an Institution for training workers for research into problems connected especially with that subject became increasingly urgent, and in 1932, thanks largely to the munificence of the International Health Board of the Rockefeller Foundation, an All-India Institute of Hygiene and Public Health was established at Calcutta

The evident importance of Malarial Research led to the establishment of a Central Malarial Institute in 1926, while in the previous year there had been established at Coonoor a Laboratory devoted entirely to the almost equally important task of Nutrition Research This laboratory is perhaps one of the largest institutions in the world devoted wholly to the subject of nutrition

The International Health Division of the Rockefeller Foundation, which had

so generously assisted in establishing the All-India Institute of Hygiene and Public Health, had interested itself first in Indian affairs in 1920, when a survey of the extent of hook-worm disease in Madras Presidency was made. Later, by training of medical officers, by means of fellowships, by special research in malaria, and by assistance to demonstration health-unit organisations among rural and semi-rural populations it has rendered most valuable aid to the Medical Services of India.

Before passing to a more detailed consideration of the Service in its relation to Research, Education and Public Health, short notes regarding a few outstanding personalities are included, chiefly to show that, though times had changed and life had become more orderly, the spirit of adventure and enquiry still activated the successors of those pioneers who had first established the reputation of the Service.

The most prominent figure of this period was undoubtedly Sir Leonard Rogers, whose work, especially on various bowel diseases and on leprosy, has given benefit to thousands. Sir Leonard was born in 1868 and educated at St. Mary's, taking his degree in 1892. He joined the Service in 1893 and devoted his professional life to research, producing works on Fevers in the Tropics (together with Sir J. Fayrer and Sir L. Brunton) in 1908, on the Poison of Venomous Snakes in 1909, on Cholera in 1911, on the Dysenteries in 1913, on Bowel Diseases in the Tropics in 1921, and on Leprosy (Croonian Lectures) in 1924-25, together with a number of other lesser works and papers on Tropical Medicine. He received the C.I.E. in 1911, was knighted in 1914, and awarded the K.C.S.I. in 1923. For many years Sir Leonard worked as Professor of Tropical Medicine in Calcutta. After his retirement, in March, 1921, he sat on the Medical Board at the India Office, of which he officiated as President from 1928-33. He was elected President of the Royal Society of Tropical Medicine, and continued to work at his specialty as Physician to the London Hospital for Tropical Medicine.

Another name outstanding in Medical Research is that of Sir Samuel Rickard Christophers, who, though less known to the public, rendered services to Science in the department of Malariology which equal those of Manson and Ross. He conducted researches into Protozoology and Entomology, and his studies and classification of the Anopheline mosquitoes have become classical. Sir Samuel graduated at Liverpool in 1896 and entered the Service in 1902. He received the C.I.E. in 1915, the O.B.E. in 1918, and was knighted in 1931. During his service he directed the Central Malarial Bureau from 1919 to 1924, the Kala-Azar Commission from 1924 to 1925, and the Central Research Institute from 1925 to 1932, retiring in that year to take up the appointment of Professor of Malarial Studies at London University, which he held until 1938. His publications were mostly on the practical study of malaria questions.

Sir Ram Nath Chopra, born in 1882, and graduating at Cambridge in 1908, entered the Service in that year and, until his retirement in 1939, devoted almost his entire professional life to the application of scientific methods to the study of

PLATE XV



SIR LEONARD ROGERS, FRS

[Facing p 200

at Madras, who both earned international fame for their operations on cataract, and also by Robert Ernest Wright at Madras and Ernest William O'Gorman Kirwan at Calcutta

Finally, we find, carrying on the traditions of the great Naturalists of previous generations, such men as Richard Ernest Lloyd, the Biologist, Robert Beresford Seymour Sewell, Director of the Zoological Survey of India, and Richard William George Hingston, Explorer and Naturalist, who accompanied the Everest Expedition of 1924 as well as the Oxford Expeditions to Greenland in 1928 and British Guiana in 1929. Hingston published his observations of Nature in a series of books "A Naturalist in Hindustan," "Nature at the Desert's Edge," "A Naturalist in Himalaya" and "Problems of Instinct and Intelligence"

On the 8th March, 1930, the last of the medical officers appointed by John Company died at the age of ninety-six—Alexander Gamack, who was born on 13th February, 1834, graduated at Aberdeen in 1856, joined the Service as an Assistant Surgeon in that year and retired on 1st August, 1879, to draw his pension for half a century thereafter

A NOTE ON THE SUBORDINATE MEDICAL SERVICES IN INDIA

From the earliest days of John Company Indian assistants were employed to work with the Company's Surgeons in their care of the sick. At first these were native servants trained by the Surgeons to act as dressers, and paid by them for their services. These individuals appear in the records under various designations such as "black hospital assistants," "country doctors," "native doctors," "black doctors" or "black assistants". Occasionally also British soldiers would be trained to work as apothecaries. Up to the middle of the eighteenth century there were no other medical subordinates.

The earliest reference to such a subordinate which Crawford was able to trace is contained in a letter from President Fremlen at Surat to the Company dated 9th December, 1639, which states that the President has satisfied the claims of "our Banyan doctor" for money lent by him to three European servants at the Factory. It adds the name of the doctor—Odor (or Adhar) Bhatt.

In 1741 a Bombay Cons. of the 10th December refers to one of these "native doctors" as "Mate in the hospital," though that designation was normally only given to a European Assistant Surgeon. A Bombay Cons. of 1738 (30th June) contains an interesting list of the subordinate staff of the Bombay Hospital at that time with their pay, together with a proposed new scale.

<i>Existing scale at that time.</i>		<i>Proposed scale.</i>	
Apothecary	Rs 10	Apothecary	Rs 10
Black Assistant	Rs 6	Mate	Rs 10
Black Doctor to Regiment	Rs 12	Four Assistants	Rs 22
Black Doctor at Mahim	Rs 6	Two Assistants for going abroad	Rs 12

In 1763 an attempt was made to reorganise the Bengal Native Army and an arrangement was then made that, if possible, an Assistant Surgeon, or Mate, should be attached to every battalion, together with two or possibly three native doctors for each battalion of Sepoys. At the end of 1783 each battalion had at least one of these doctors permanently on its staff and, by the end of the eighteenth century, these subordinates had established their claim to be considered as pensionable servants of the Company.

The need for personnel of this type was fully appreciated by the other Presidencies also. Madras commenced the regular training of Anglo-Indians to serve on the Medical Establishment soon after the middle of the eighteenth century, and the best of these were taken on to the paid establishment of the Medical Department with the designation of Sub-Assistant Surgeons.

In a Military Cons. of 31st March, 1788, is given a list of all the Sub-Assistant Surgeons then on the establishment. Evidently the net was thrown wide—three of the seven had been private soldiers, three were Indian born and one a native Portuguese.

“ John Crawford, Mysulpatam Hospital, a private in the Hon^{ble} Company's Service

Francis Lupton, Madras Hospital, a native of India, appointed a Sub-Assistant by M^r Wynch at the recommendation of M^r Luxx to whom he had served his regular apprenticeship

Mich^l Recontre, Chingleput, born in India, from his assiduity in that line, appointed a Sub-Assistant

James Patterson, Trichinopoly Hospital, came out a private, and is now returned as a Matross in the 2nd Battalion Artillery

And^r Davies, Vellore Hospital, a private in the Hon^{ble} Company's Service

John Paschall, Vellore Hospital, born in India and apprenticed to M^r Gahagan

Domingo Vincloster de Roza, Madras Hospital, a native Portuguese, formerly apprentice to M^r Runc ”

In 1802 Bombay had come into line, and a scheme was put forward for training native doctors to serve on the cruisers of the Bombay Marine.

By 1812 the Subordinate Medical Department was beginning to take the form which it kept throughout that century and well into the present, and we may deal with the component elements in turn. There was a separation firstly between Native doctors of European or Anglo-Indian birth, and Native doctors of Indian birth. The former were known first as Apothecaries and then as Assistant Surgeons, and the latter first as Dressers, then as Hospital Assistants and later as Sub-Assistant Surgeons. Each of these groups was again subdivided into a military cadre and a civil cadre.

THE ASSISTANT SURGEON GROUP

A military sub-medical department was first constituted in Bengal in 1812, when a C G of 2nd July approved of a plan to train boys from Orphan and Free Schools as compounders and dressers with a view to their becoming at a later date Apothecaries and Sub-Assistant Surgeons for service with "either European or Native Corps, or with General or Field Hospitals as the circumstances may require" There was, in addition, some recruitment from the ranks of European Regiments for employment as Dispensers

In the service so formed there were, from the beginning, the two sections referred to above By 1827 the cleavage had become complete with the formation of two distinct branches—the Apothecaries Branch and the Dressers Branch By 1868 the latter of these branches formed the group of Hospital Assistants, later to be known as Sub-Assistant Surgeons

At the moment, however, we are concerned only with the former of the two branches—the Apothecaries—who became, in due course, the Assistant Surgeons concerned primarily with the care of British troops in Military Hospitals These men were given a course of training in the existing Medical Colleges, which extended over only three years, at the end of which they were commissioned with British warrant rank

By 1884 the status of the Department was improved and *relative* honorary rank as Lieutenant and Captain with the advantages attached to such rank was bestowed upon Senior Apothecaries of the first grade of under three years' and over three years' service respectively in that grade

At that time the effective strength in the three Presidencies was fixed at

Bengal	264
Madras	64
Bombay	51
	—
	379

This cadre allowed for normal military and semi-military duties, a reserve of 15 per cent for leave, and of 20 per cent for war Men in the latter reserve were allowed employment in civil With this improvement in status there arose a need for a more adequate training, and the course of study was raised from three to four years

In 1890 Honorary Commissions took the place of the relative rank which had been bestowed in 1884, and in 1894 the Indian Subordinate Medical Department (I S M D) reached its final stage during that century when the Apothecary became, and remained, the Assistant Surgeon

In 1912 the additional Honorary rank of Major was added for officers of fifteen years' commissioned service and, on 2nd October, 1918, in recognition of the good service rendered by the Department during the First Great War, the word "Subordinate" was dropped from its designation and it has been known thereafter as the Indian Medical Department (I M D).

The question of the professional standing of doctors in the Department had always been a vexed one, as the restricted training provided did not permit them, though qualified for work with British troops in India, to comply with the requirements of the General Medical Council for full recognition as medical practitioners. This state of affairs was a serious one as it meant that these doctors were conscious that their qualification was an inferior one, which could not lead to satisfaction either for Government as employer or for the men themselves. The fault lay partly with too casual a recruitment for the Department. Originally men of little or no education were engaged and, when recruitment was at last officially supervised, only half-measures were adopted in selection, physical fitness being usually considered as of greater importance than mere intellectual attainments.

At the turn of the present century the Military Assistant Surgeons themselves several times memorialised Government regarding (1) the serious lack of primary education in the class of candidates recruited, (2) the shortness of the medical training given after acceptance, and (3) the laxity allowed in the interpretation of the word "Eurasian". It was justly complained that, if the only criterion was to be that one of the grandparents should have been a pure European, the door was wide open for Goanese claiming Portuguese descent, Native Christians baptised with Scotch names, men who in appearance and habits were not to be distinguished from Indians, *et hoc genus omne*.

Orders were shortly after issued which tightened up the verification of the nationality of candidates, and the introduction of a probationary period for weeding out men who proved to be undesirable was considered. It was, however, not until May, 1914, that the Secretary of State for India ruled that the preliminary standard of education should be raised to that required by the General Medical Council, and that the course of medical study should be increased from four years to five.

Recruitment up till 1920 had been by a competitive examination and from 1921 to 1933 by selection, but in 1934 a special selection board came into existence which consisted of the Director-General, Indian Medical Service, the Director of Medical Services in India and a representative of the Adjutant-General's Branch. Entrance after that date was strictly limited to Europeans, domiciled Europeans and Anglo-Indians. Training for a University degree was arranged for successful candidates at the Medical Colleges at Calcutta, Madras and Bombay, and the Department could at last count upon getting the best men available from the classes eligible for admission—men who were fully qualified and in possession of a medical degree which was recognised by the General Medical Council, and who were capable of assuming the sub-charge of a British Station Hospital, or the direct professional charge of hospital wards. Both the prestige and the efficiency of the Department were benefited by these changes.

The fact that their organisation as an essentially Military Department had largely precluded any considerable enjoyment of Civil practice has always been looked upon

as a disadvantage of service. It is true that, as long ago as 1833, Government were interested in the founding of a Civil Medical Department, and that, with the opening of the Medical Colleges in the three Presidencies in 1835-45, a higher grade of Indian doctor was being produced, who also earned a higher rate of pay for employment in independent charge of a jail hospital or of a small civil station, yet opportunities for civil work have rarely been considerable.

The Civil Assistant Surgeons in this higher grade were known until 1874 as Sub-Assistant Surgeons, but this designation must not cause them to be confused with the Hospital Assistants of the lower grade who later (1910) came to bear the same designation. A further confusion in the nomenclature of the Medical Services lay in the use of the term "Assistant Surgeon" up to 1873 to denote a Junior Surgeon of the Company, and after 1894 a doctor in the Medical Subordinate Department who had before that date been known as an Apothecary. The following table may clarify this somewhat obscure matter —

Officer grade (I M S)

Surgeon to John Company

Assistant Surgeon to John Company (abolished 1873).

Surgeons were given Military Titles in 1898

Subordinate grades (I S M D —later I M D)

(1) of European, Domiciled European or Anglo-Indian birth
were known as Apothecaries in 1868,

„ „ „ Military Assistant Surgeons in 1894

(but Civil Assistant Surgeons who originated in 1835 were known as Sub Assistant Surgeons until 1874)

(2) of Indian birth,

were known as Dressers in 1827,

„ „ „ Hospital Assistants in 1868,

„ „ „ Sub Assistant Surgeons in 1910

(The far-reaching changes in the Medical Services in India, which took place in the early days of the Second World War, included the reorganisation of the I M D and, since 1941, there has been in existence an Indian Medical Department, with a British cadre absorbing the Assistant Surgeon grade, and an Indian cadre absorbing the Sub-Assistant Surgeon grade. The latter now hold rank as Assistant Surgeons, Indian cadre.)

In the early years of the present century opportunities for Civil Employment were at their peak as Government were, at that time, especially interested in the maintenance of an adequate war reserve and, in 1912, the strength in Civil Employment was actually 255 against 450 in Military. Later restrictions and readjustments have, however, caused the majority of civil posts to be closed to the Department, and the original reserve has almost ceased to exist.

Many men who have served in the I M D have reached considerable eminence. We have already, in these pages, referred to the remarkable career of Sir Patrick

Hehir, and the gallant deed which earned the V C for Hospital Apprentice Arthur FitzGibbon finds a place among the citations quoted at the end of this story

Sir Henry Albert John Gidney was born in 1873, the son of an Irish father and an Indian mother. He was educated at the Calcutta Medical College as a Medical Pupil, and joined the I S M D in 1894 at Bombay. After a few years' service he left to study in Edinburgh and London. In 1902 he obtained the F R C S (Ed) and the D P H (Camb) and entered the I M S in 1898, from which he retired as a Lieutenant-Colonel in 1915. After retirement Sir Henry entered politics and played a conspicuous part as the chief representative of the Anglo-Indian Community for nearly twenty years. In 1941 he was appointed a member of the Indian Defence Council. He was knighted in 1931 and died suddenly in New Delhi on 5th May, 1942.

Many officers of the I S M D besides Sir Patrick Hehir and Sir Henry Gidney have, from time to time, obtained commissions in the I M S —by nomination under the rule of the Company and, more recently, by selection. Crawford gives (II, 111) several instances from olden times from which we quote the two following —

“ John Bowron, born in February 1799, entered the Sub-Medical Department as a medical pupil on 1st July, 1813, was appointed Apothecary on 7th Sept, 1816, promoted to Assistant Surgeon on 25th Dec, 1825, became Surgeon on 16th Dec, 1840, retired on 31st Dec, 1851, and died at Hove, Brighton, on 5th March, 1899, aged one hundred ”

“ John Shortt, born 26th Feb, 1822, Assistant Apothecary, Madras, 20th Jan, 1846, M D, King's College, Aberdeen, 1854, M R C S and L S A, 1854, also Member of the College of Veterinary Surgeons, Edinburgh, 1854, M R C P, London, 1859, Assistant Surgeon, Madras, 20th Sept, 1854, Surgeon, 20th Sept, 1866, Surgeon Major, 1st July, 1873, retired 12th February, 1878, died at Yercaud, 24th April, 1889. Dr Shortt was one of the first to experiment with the poisons of Indian snakes. He was also a voluminous writer, chiefly on agricultural subjects ”

A more recent example is to be found in the career of Colonel E E Doyle, born in 1886, who joined the I S M D in 1906, resigned in 1909 and proceeded to qualify in Edinburgh. He entered the I M S in 1911, received the D S O in 1920, became Inspector-General of Prisons in Bombay in 1929 and was awarded the C I E in 1931.

Probably the most remarkable career of all the officers of the Department was that of Major Thomas Henry Hill, whose father served as a midshipman at the battle of Cape St Vincent in 1797 and later with Queen Isabella's Lancers in the Portuguese War of Succession, finally joining the army of John Company to serve under Napier in Sind. Young Thomas Hill, while his father was adventuring further in Burma, was sent to the Lawrence School at the tender age of five. So urgent became the demand for medical apprentices in the year 1857 that, at the age of thirteen, he was enrolled and served throughout the Mutiny. In his later years he served as Assistant Secretary to the Director of Medical Services in India from which appointment he retired in 1903 after forty-six years' service. Major Hill established three more records—he was the first officer of the I M D to be granted the rank of Major, he was awarded the C I E in 1901, a unique distinction for a member of the

Department, and he was, for many years, the last medical survivor of the Mutiny. He died in 1930 at the age of eighty-six.

As we have already noted, reorganisation of the Indian Medical Department was undertaken in 1941, after which date the Assistant Surgeon grade formed the Indian Medical Department (British cadre), though still holding British Warrant rank.

THE SUB-ASSISTANT SURGEON GROUP

It was in 1827 that the "Dressers" in the service of the Company were given status separate from the "Apothecaries". These Dressers were, as we have pointed out, men of Indian birth. They were put through a course of training at the school for training native doctors, which had been set up in Calcutta in 1822, after which they were regularly enlisted as soldiers and succeeded to vacancies in either the Army or the Civil Department on a salary of Rs 20/- per month. The length of the course of training was left to the discretion of the Superintendent of the School as is shown by these extracts from G O G G of 21st June, 1822.

"(Para 26) When the Supt considers a student sufficiently qualified, he will certify the same to the Medical Board, who will grant a certificate to the student, and appoint him as a Native Doctor upon the occurrence of a vacancy (Para 27) Rupees eight per month allowed to each student for clothing and maintenance (Para 29) Pay of native doctors educated at the school to be higher than that of those previously serving"

Though the above arrangements catered originally for both Civil and Military requirements, the needs of the Army were met later from the Medical Schools founded at Agra in 1853 and at Lahore in 1860.

Even in those remote days a certain respect was shown by those in authority to the dignity of these humble practitioners. It was decided, for example, in a Bengal G O of 24th May, 1832, that they should not be submitted to the degradation of punishment by flogging, to which ordinary enlisted men were liable.

"An instance having lately occurred of a native doctor who was found guilty of intoxication, being sentenced, by a regimental court-martial, to be flogged, the Commander-in-Chief desires it may be understood that he does not consider corporal punishment as a fit sentence for a class of persons whose respectability His Excellency is desirous to maintain. Where the conduct of a native doctor may be found such as to degrade him in the eyes of the regiment, or to render him unworthy of the confidence of the Surgeon, His Excellency is pleased to authorise a regimental court-martial to award, as a punishment, dismissal from the service, as only men of good character will be allowed to remain in so respectable a situation."

By 1868 this grade had completely separated from the Apothecaries and their designation of "Dresser" was changed to "Hospital Assistant". In 1900 there was a reorganisation of this section of the Department, and rates of pay and status were both considerably improved. Senior Hospital Assistants were given Commissions as Warrant officers, ranking in the first class as Subedars and in the second class as Jemadars.

In 1910 the designation "Military Hospital Assistant" was changed to "Sub-Assistant Surgeon," and finally, in 1941, to "Assistant Surgeon (Indian Cadre)" with the Warrant rank abolished, and a Viceroy's Commission substituted for it

The training originally given to the medical officers of this grade was totally inadequate for men whose lives were to be spent in the practice of medicine. The order of 1868 which separated the grades, provided for a course of only two years' study in a Medical College, followed by an examination which gave to successful candidates entrance to the lowest grade of Hospital Assistants. A limited number of these Assistants were, after seven years' service, and subject to certain conditions regarding general knowledge and ability, to be allowed to attend the medical college for a further period of two years to qualify for admission to the grade of "Civil Sub-Assistant Surgeon" which, as we have seen, was the misleading title used to designate men of the Assistant Surgeon grade engaged for civil employment.

There was always a great need for supplying Indian doctors for civil employment and, in 1878, Government decided on the division of this grade into two branches, one for military employment according to military needs, plus a reserve of 25 per cent, and one for civil employment which would form a separate group in each Province sufficient for the civil work of that Province. Local Governments were left to form their own plans regarding the education of these men, and such plans were often exiguous in the extreme.

By 1885 the length of the course of medical training for this grade had risen from two years to three. At that time the strength of the military branch of the grade was as follows, with the figures for 1902 for comparison —

	1885	1902
Bengal	336	530
Madras	153	161
Bombay	124	169
	—	—
	613	860

In 1914 Government decided that a few—indeed, a very few—Sub-Assistant Surgeons of twenty years' service, and with the most exceptional attainments, might be promoted to the rank of "Civil Assistant Surgeon." Apart from this meagre advancement in the status of the grade little was done, except for increases in pay and allowances from time to time, to alter the existing conditions of service, until the complete reorganisation of the I M D in 1941.

After that date the Assistant Surgeon (Indian Cadre), as he was then designated had the road open to him, if properly qualified, to proceed to an Emergency Commission in the I M S for service during the Second World War, with permission to count professional experience up to a total of five years, and any higher qualifications, towards an antedate for promotion in the Service.

Alongside all these improvements there has always been one continual drawback—the inadequate medical training given to these men. Elsewhere in this narrative we

have dealt in more detail with the impracticability of attempting to maintain in India different levels of medical qualification. It is, indeed, true that often the man may rise above his circumstances, and all who have practised medicine in India have known members of the old Sub-Assistant Surgeon class who have been doctors of high character and considerable practical experience in dealing with the sick. Nevertheless the cold facts remained in 1941 very largely as stated by Crawford thirty years before (II, 123)

“ There is probably no service in India in which so much difference exists between the best and the worst members as that of the Civil Hospital Assistants. It would greatly improve the standard of the whole class if arrangements were made under which the best individuals might, after further study, qualify for, and be promoted to, the Assistant Surgeon class ”

THE INDIAN MEDICAL SERVICE AND MEDICAL RESEARCH IN INDIA

(Contributed by LT -COL H W MULLIGAN, I M S, Director, Central Research Institute, Kasauli)

In the early history of the British connection with India, the Indian Medical Service provided practically the only source in the country, of officers with scientific training. It is natural, therefore, that they should have been called upon to undertake work for which some scientific background was necessary. Their attention was, of course, directed mainly to medical problems but a number of workers found scope for their talents in other directions, as, for example, in the development of the Posts and Telegraphs Department, the institution of Botanical and Zoological Institutions, the organisation of the Mint, etc

In the early days most research activities were undertaken purely as individual enterprises and it may be said that there was no organised medical research in India until 1894 when the Indian Medical Congress submitted resolutions to Government urging the establishment and endowment of a Medical Research Institute. Prior to this, medical officers working on their own initiative, usually with extremely limited resources, had from time to time made important contributions to the knowledge of tropical diseases. As long ago as 1845 Surgeon-Major Dempster introduced the spleen rate as a measure of malarial endemicity and used it to map out the incidence of malaria in villages of the Punjab. This appears to have been the first occasion on which the spleen rate was used for this purpose and it has since become the main yard-stick for measuring the incidence of malaria in many parts of the world. Classical studies on other subjects were also carried out in these early days among which may be mentioned those of Lewis on trypanosomes and filaria, Vandyke Carter on spirilla, leprosy and mycetoma, Macnamara on cholera, and Fayler on snakes and snake venoms. During the latter part of the nineteenth

PLATE XVI



SIR RICKARD CHRISTOPHERS, F R S

[Facing p 211

century, officers of the Medical Service were occasionally deputed by Government to study special problems. Among those who made notable contributions to our knowledge of tropical epidemic diseases may be mentioned Cunningham, Lewis, Giles and others who carried out investigations on cholera, malaria, kala-azar and beri-beri. At the close of the nineteenth century, two outstanding occurrences were largely responsible for stimulating greatly increased interest in medical research in India—firstly, the reappearance in India of plague in epidemic form after an absence of nearly two centuries, and secondly the epoch-making discovery by Sir Ronald Ross of the transmission of malaria by the mosquito. These dramatic happenings were largely responsible for the institution of organised medical research in the country.

Until comparatively recently, the large volume of medical research work of high quality, carried out in India, may be said to have been accomplished almost exclusively through the initiative of officers of the Indian Medical Service. In recent years, however, research has become a more widespread activity and is no longer restricted to officers of that Service.

A brief account of the work achieved in some of the more important fields of investigation will indicate the part played by I.M.S. officers in the development of medical research in India. It is perhaps true to say that India has led the world in investigations on such important problems as malaria, cholera and kala-azar, and has played a very prominent part in the investigation of such other important problems as rabies, leprosy, dysentery, plague, protozoal infections, nutrition, etc.

Malaria constitutes the major health problem in India and it is not surprising, therefore, that it should have received a large measure of attention from medical research workers in the country. The first great contribution to this subject was made by Sir Ronald Ross in 1897. Subsequently, the systematic investigation of mosquitoes received much attention from I.M.S. officers and the researches of Giles on mosquitoes generally, and of James and Liston on the Indian anophelines, were prominent among the pioneer investigations in this field. Investigation of the efficacy of different species of anophelines as carriers of malaria led eventually to the enunciation by Christophers of the principle of "species sanitation." This school of pioneer workers included other such well-known names as Patton, Cragg and Donovan. In 1908 the epidemiology of malaria in India began to receive attention and the pioneer investigations of Christophers in this field are classical. These early researches resulted in the formation of a Central Malaria Committee which was a potent factor in stimulating research on malaria all over the country and among those I.M.S. officers who made notable contributions to our knowledge of this subject, the names of Fry, Gill, Graham, Hodgson, Horne, Ross, Perry and others are well known. Unfortunately, this phase of intense activity in the investigation of malaria in India was interrupted by the outbreak of the Great War in 1914. After the war there was a revival of activity in malaria work and within a few years a central organisation known as the "Malaria Survey of India" was started. This organisation, now known as the "Malaria Institute of India," owed its inception

to the initiative and foresight of Christophers, and its subsequent development into what may fairly be regarded as the most prominent malaria research organisation in the world has been due mainly to the efforts of I M S officers among whom may be mentioned Sinton, Covell, Mulligan, Afridi and Jaswant Singh. It is noteworthy that at one period during the last war the activities of the army anti-malarial organisation were directed by Brigadier Sinton in the Middle East Command, by Brigadier Mulligan in the Persia and Iraq Command, and by Brigadier Covell in the India Command.

As India is the main endemic home of cholera and, as the country has, for centuries, been swept at intervals by epidemics of this disease, it is natural that it should have been the subject of much study. Even before the discovery of the cholera vibrio by Koch in 1884, extensive studies on the clinical and epidemiological aspects of this disease had been undertaken by Corbyn, Twining, Johnson, Morehead, Macnamara and others during the nineteenth century and their writings provide a record of great historical interest. After Koch's discovery, important studies were carried out on the cholera vibrio, especially by Macnamara, and later by Greig. The epidemiology of cholera in India was subsequently studied by Russell, while Rogers made important contributions in relation to the forecasting of epidemics. Important epidemiological studies were also carried out by Gill in the Punjab, the results of which were incorporated in his stimulating book "The Genesis of Epidemics". Another phase of investigation on which much work has been done in India, is the subject of bacteriophage in relation to cholera and the names of Morrison and Malone are prominent in the literature on this subject. Prophylactic inoculation against cholera has been the subject of extensive study by numerous workers. A new phase of cholera research has been in progress during the last ten years, and a number of enquiries have been undertaken, the work of which has been co-ordinated by a Cholera Advisory Committee. The main line of investigation has been directed towards ascertaining the characters of the vibrios obtained from cases, carriers and external sources, the vibrio being studied in relation to its source of origin and epidemiological circumstances of isolation. The work has involved the study of the chemical constitution of vibrios and their metabolism, biochemical reactions and other characters. This later work has done much to elucidate problems in epidemiology and immunisation against cholera and is associated with the names of many I M S officers, amongst whom may be mentioned Taylor, Anderson, Ahuja, Pasricha, Shortt and others.

Plague had been absent from India for about two centuries when it was re-introduced from China in 1896. The disease became severely epidemic and, within a few years, had spread over most of peninsular India. British, German and Russian Commissions visited India to investigate this disease but none of them elicited any of the essential factors in the epidemiology of plague. The Government of India later deputed two I M S officers to investigate the disease in Bombay and as a result of their efforts, a new Plague Research Commission was formed in 1905. This

Commission, which included three experienced workers from England, continued their studies over a period of eight years, during which time results of the highest importance were obtained. The reports of this Commission provide a wealth of information on every aspect of plague and include the proof of its transmission by rat fleas, the credit for which must be largely attributed to Liston. The detailed studies of this Commission brought to light the essential facts on which plague preventive measures can be based. After this Commission was disbanded, research work on plague was continued chiefly at the Haffkine Institute in Bombay on which also a number of field enquiries have, from time to time, been based. Researches are still in progress at this Institute and important advances have been made in the production of an improved prophylactic vaccine, in extending knowledge of plague epidemiology, and in the treatment of plague both by serum and drugs. Members of the Service have been largely responsible for the initiation and conduct of plague research in India and this tradition is maintained at the present time by Lieut.-Colonel Sokhey, the present Director of the Haffkine Institute. The names of Liston, Lamb, Bannerman, Taylor, Sokhey and others occupy a prominent place in the literature on this disease.

The occurrence in India of kala-azar, chiefly in Assam and Bengal, attracted the attention of members of the Service from early times. An outbreak of epidemic fever in Burdwan between 1850 and 1875 roused the interest of contemporary observers, including Elliot and French whose accounts of this epidemic provide an accurate description of later epidemics of kala-azar after it had been recognised as a distinct disease. The disease was investigated in Assam during the last decade of the nineteenth century by Rogers and by Ross and was considered by these workers to be a form of malaria, or, possibly, a distinct disease allied to Malta fever. The causative organism of kala-azar was discovered by Leishman in 1903 and independently in the same year by Donovan in India. This organism was subsequently named *Leishmania donovani* by Ross in 1903. Work on this parasite was quickly taken up in India and, during the next decade, Christophers contributed his classical description of the pathology of kala-azar, Rogers demonstrated by culture that the parasite was a flagellate, Patton discovered that the parasite assumed the flagellate form in the bed-bug and contributed a clear account of the development of the various forms of the parasite in an insect host, while Mackie suggested, for the first time, the probable role of the sandfly as the transmitting agent. In the following decade further important contributions were made by Rogers, Knowles and others on the treatment of kala-azar by antimony compounds; and Spackman introduced an important diagnostic aid, the Formol-gel Test, which was further developed by Napier. In the years following the First Great War research on many aspects of kala-azar was actively taken up and so much interest in the disease was aroused that, in 1924, a kala-azar Commission was established under the directorship of Christophers and later of Shott, while at the same time, an ancillary enquiry was set up in Calcutta under Knowles. The work of these two enquiries

produced a flood of information on almost every aspect of the kala-azar problem, the most important discovery being the incrimination of the sandfly as the probable vector. Successful transmission of kala-azar in the hamster by the bite of *P. argentipes* was demonstrated but the final proof of human transmission by this insect had not been obtained when the Commission was disbanded. This proof was, however, provided nearly ten years later by Shortt and Anderson in Shillong.

A great deal of original work on protozoology has been carried out in India by officers of the I M S. Reference has already been made to the important researches on the parasites of malaria and kala-azar. Other work of medical, veterinary or general interest includes the working out of the life cycle in the dog, and in the dog tick, of *Babesia canis* by Christophers. This author also described species of Hepatozoon and Hæmatopinus, while James, Acton, Knowles, Mackie and others made important contributions on a species of Hæmoproteus and Herpetomonas. Two members of the Service who have made many subsequent contributions to the literature on Protozoology covering a very wide field are Shortt and Knowles. Perhaps the most important contribution, from the practical point of view, in the history of protozoology in India, was the isolation and description of several species of monkey malaria parasites, with which the names of Knowles, Sinton and Mulligan are prominently associated. The three species, *P. knowlesi*, *P. cynomolgi* and *P. inui* are now in common use in experimental work on malaria in all parts of the world.

Workers in India have also made outstanding contributions to the subject of nutrition. The earliest important work dealing with nutrition problems in India was that of McCay, whose book "The Protein Element in Nutrition" was published in 1912, before the importance of vitamins and minerals in nutrition was understood. While this author laid undue emphasis on the protein factor, his work was the first to draw attention to the relation between diet and physique, and may well be considered one of the classics of nutritional science. The active development of nutrition research in India after the First Great War was due to the pioneer efforts of Sir Robert McCarrison. McCarrison first studied the effect of faulty food on the thyroid gland and subsequently extended the range of his investigations to cover the pathological changes, caused by defective diet, in most of the organs of the body. McCarrison made many contributions to the literature on nutrition and built up one of the foremost organisations in the world for research on nutrition problems. He retired in 1935 but the organisation which he created is still actively engaged in nutrition research.

Since 1900 research on rabies has been continuously carried out under the direction of officers of the I M S at Kasauli and at other centres opened at later dates. Much of this work has been devoted to the investigation of prophylactic treatment against rabies. In 1911 Semple introduced a vaccine of a different type from the original dried cord method used by Pasteur. This killed carbolised vaccine, reduced the risk of accidents and was later shown by other workers, including Harvey and Acton, to give even better protection than the original Pasteur method.

The introduction of carbolised vaccine made possible the preparation of anti-rabic vaccine in the plains and the decentralisation of anti-rabic treatment throughout the country. Researches to evolve an even more efficacious vaccine have been the subject of much study and in this connection the names of Cunningham, Malone, Harvey, Acton, McKendrick, Greig and others are well known. Research on the pathology of rabies, accidents of treatment and other aspects of the disease have been carried out extensively in India and in addition to the workers mentioned, the names of Cornwall and Shortt are prominent in this connection. The system of recording elaborate data on every case treated has provided material for statistical analyses, the results of which have done much towards the achievement of our present state of knowledge regarding the prevention of rabies.

Officers of the I.M.S. have taken a prominent part in research on medical entomology in India. Work on this subject dates from the time of Ross's discovery of the mosquito transmission of malaria. The demonstration that anopheline mosquitoes only were implicated in malaria transmission, directed the attention of workers in India to a detailed study of them. Amongst the pioneers in these investigations, the names of James, Liston and Christophers are particularly well known. From the commencement of his service in India, Christophers took up a life-long study of anopheline mosquitoes and contributed more to this important subject than any other single individual. His work included exhaustive researches on the structure and systematic position of these insects and of their habits. These studies attracted world-wide attention and formed the basis of many classical contributions to this literature, including papers and memoirs in current periodicals and the *Culicidæ* volume of the "Fauna of British India." In addition to his own investigations, Christophers was instrumental in stimulating important investigations by other workers. As well as his researches on mosquitoes, Christophers made important contributions on the anatomy and histology of ticks. Entomological work of the first importance on rat fleas was carried out by Service members of the Plague Research Commission, among whom the most important were Liston, Lamb and Taylor. In the earlier part of the present century, extensive researches on the anatomy and bionomics of the blood-sucking Diptera and other insects were carried out by two young I.M.S. officers, Patton and Cragg, whose text-book on medical entomology, published in 1913, still remains a classic. Major Cragg devoted the greater part of his service to the study of lice, ticks and blood-sucking flies and was still engaged in this work when he contracted typhus, during its investigation, and died in 1924. In more recent years the typhus fevers of India have attracted considerable attention and, among those who have made valuable contributions to the study of this disease, the names of Megaw and Covell are best known.

Mention has already been made of the exhaustive researches on the genus *Phlebotomus*, carried out by Christophers, Shortt, Knowles and others in relation to the transmission of kala-azar. Systematic studies on these insects formed the basis of an extensive series of publications by Sinton. In more recent years, entomo-

logical studies have been directed more and more to the investigation of the bionomics of insects of public health importance in India

Another subject which has attracted considerable attention in India is leprosy. The impetus to organised research on this disease came through Sir Leonard Rogers, who was instrumental in establishing a leprosy research centre in Calcutta and in founding the British Empire Leprosy Relief Association with its Indian Council. Rogers's own outstanding contributions to our knowledge on this disease concerned chiefly the determination of the value of various forms of treatment, but he also made notable contributions to its epidemiology. He may be regarded as the only member of the Service who achieved great distinction in this field of investigation.

So far, attention has been directed chiefly to the accomplishments of officers of the Service in investigating diseases of great importance from the public health point of view. Many have, however, contributed clinical and therapeutic studies of considerable importance. Workers in India have always enjoyed a reputation for exceptional skill in ophthalmological work. The modern operation for cataract, for example, was evolved by Smith at his clinic in Jullundur, and, later, research work of the first quality has been carried out at Madras by Drake-Brockman, Elliott and Wright, and in Calcutta by Kirwan. Freyer's pioneer contributions to operative procedures, such as lithopaxy and prostatectomy are well known. Other clinical researches of outstanding merit include the treatment of amœbic dysentery by emetin and of cholera by hyper-tonic saline, for which the credit goes to Rogers, and the exhaustive researches carried out on the treatment of malaria under the direction of Acton, Knowles, Sinton and others. More recently the discovery of endemic fluorosis and the study of clinical and pathological aspects of this disease have attracted attention. This work is associated with the names of Shortt and McRobert. One of the best known text-books on Tropical Medicine is that written by Rogers and Megaw and it is doubtful whether many books have been written by authors with more practical experience and more original work on which to base their presentation of a subject.

Extensive researches on pharmacology, particularly on the pharmacology of indigenous drugs, have come into prominence in recent years and in the conduct and direction of this work, Sir Ram Nath Chopra has taken the leading part. His voluminous text-book on this subject is unique.

The results of medical research work carried out in India are published chiefly in three journals—the *Indian Journal of Medical Research*, the *Journal of the Malaria Institute of India*, and the *Indian Medical Gazette*. All these journals were started through the initiative of I M S officers and all have continued to maintain a high standard under the editorship of officers of the Service.

The Service has also produced distinguished investigations in other branches of science during this century. Among these may be mentioned the researches on botany by Sir David Prain, and on marine biology by Sewell.

revolution itself and by the agricultural revolution which preceded it and in some ways paved the way for it by smashing the small landholder, ruining cottage industries and thus pauperising large sections of the community. The major stimulus to the setting up of public health administrative machinery in England, was, however, the coming of cholera in 1831, after which events followed one another in quick succession. In 1842 a Royal Commission reported on the condition of the labouring people of Great Britain, and this report which was signed by, and probably written by, Chadwick, the Poor Law Commissioner, revealed a state of affairs that shocked the public conscience of that time. We shall see, in due course, the effect of a somewhat similar report on the administration in India nearly a century later.

The reappearance of cholera in 1849 and 1854 can now be said to have been both timely and helpful, as it prevented the development of any complacency, and added a stimulus to further action. Control over public health in England was in the hands of the Privy Council from 1858 to 1871, after which it passed to the Local Government Board, which body in turn gave way in 1919 to the Ministry of Health. A landmark in the nineteenth century was the passing of the Sanitary Act of 1866, of which Simon said that "under this Act the grammar of common sanitary law first acquired the virtue of the imperative mood." There is no comparable Act in force in India in 1945. In 1872 came the consolidating Public Health Act, which was to remain for so many years the principal Health Act in England.

The latter part of the nineteenth century and early years of the twentieth saw many measures introduced which produced changes in local administrative machinery mostly in the direction of placing more authority in the hands of the centre. A system of "grants-in-aid" was tried out, but abandoned in favour of a block-grant system. During this period many Acts were passed which covered the whole of the wide field of affairs affecting the social life of urban and rural communities. In this way such subjects were dealt with as town planning, the collection and disposal of household and other wastes, the provision of water supplies, light, and modern sanitation for both urban and some rural communities, the control of epidemic disease and the provision, under the local public health authority, of hospitals for special conditions, *e.g.* maternity, tuberculosis, smallpox, infectious diseases, etc., etc. Closely related subjects such as the employment of labour, conditions in factories, the employment of women and children in industry and education, were all the occasion of many Acts during this period. This great mass of legislation may be said to have culminated in the Act of 1929 which, broadly speaking, aimed at placing local authority in the hands of bodies large enough to meet and discharge their responsibilities, and to consolidate powers possessed by the Ministry of Health on a statutory basis. Further developments in this direction are proposed in a Bill now under consideration.

The above brief review, which is of necessity incomplete, is meant to indicate how, over a prolonged period, ideas on the subject of public health changed in the United Kingdom, and how there grew up slowly the concept of the State's responsibilities in this matter towards its individual members. It is a story that culminates

in a period of one hundred years of trial and error, practised by the administration of a people who had accepted for centuries the idea of corporate action to deal with individual responsibilities. Were it possible for those great reformers, Chadwick and Simon, to revisit the scene of their former labours, they would find much indeed to admire and approve, but such observant critics would also find much to arouse their disapprobation, and a minute by Chadwick on the present housing conditions in England would make stimulating, if perhaps painful, reading. Let us now consider how these events in far away England affected conditions in India.

First steps to investigate officially the state of public health in India were directed primarily towards the health of troops, to investigate which a Royal Commission was appointed in 1859 and reported in 1863.

Before recording a few extracts from that report it is necessary to consider what exactly the Commission was supposed to do. They were briefed to enquire into "the rate of sickness and mortality and invaliding among our Troops, both of the General and Indian Services" etc, etc, and "into the class of disease from which such sickness and mortality arises". Their functions included also an enquiry into every aspect of sickness and mortality, details of the various military stations, why they were unhealthy and how they could by selection of site, etc, be rendered more suitable. Matters relating to the construction of barracks and the wider question of the organisation of the sanitary and medical services of the Army also fell within their purview. On all these matters they were required "to report what changes you may consider it expedient to make in the present practice". The two massive volumes that contain their report are silent evidence of how well they did their task. It is interesting to consider how little more modern knowledge would change any one of the thirty-nine recommendations which they made, or make any considerable addition thereto.

From the wealth of material available in those volumes space forbids quotation of more than a fraction. We may best start with Dr John Sutherland, M D, who in an abstract of the returns made to questions asked by the Commission writes, "there are no statistical data whereby the annual ratio of sickness and mortality of the native population at the different stations can be ascertained. India appears to possess no system of registration whereby the exact state of health of the population can be known. The information, therefore, on this subject given in the stational returns is of a very general nature, and is the result of enquiries made on the spot, and from nearly all the stations the information is of the same character. Everywhere the miasmatic class of disease is the one which has attracted the notice of medical officers. Fevers, intermittent, remittent, and typhoid, cholera, dysentery, smallpox, spleen disease, diarrhoea, rheumatism, such is the account of station after station. Epidemics, the result of imperfect civilisation and removable causes, prevail in India at the present day, as epidemics used to prevail in Europe in the Middle Ages. The work of civilisation and sanitary improvement has yet to be initiated in this great country. The prevailing causes are everywhere the same. filth, stagnant

water, damp, foul ditches, want of drainage, bad drinking water, 'utter neglect of ventilation and of all sanitary measures,' overcrowding of houses, foul air There is not a local cause of these epidemic diseases cited by the reporters which does not admit of mitigation or removal "

The above comment, written one hundred years ago, inasmuch as it is a generalisation might have been repeated in any annual report of the Public Health Commissioner with the Government of India for the last ten years

Observations by Miss Nightingale on the evidence sent to her is to be found in the report in some twenty-five pages of close-printed, vivid, constructive invective accompanied by some excellent woodcuts that she had specially made to accompany her contribution A few examples follow "Neemuch has attained the high pitch of civilisation of building latrines for its bazaar, but these being built too close to the houses are not used at present for lack of a proper establishment to keep them clean", "Agra employs all the powers of nature and none of its own to get rid of its 'fluid refuse'", "the system of water supply and drainage in India may be briefly defined as follows they draw water from a well, not knowing whence it comes, and if there be any means to drain off water it is into a cesspit, or into long open pervious drains, not knowing whither it goes It is impossible to pursue this subject (*sic* drainage) further There are such much worse things in the Stational Reports than I have chosen to give, that I must say to those who call my bonnet 'ugly'—'there are much uglier bonnets to be had' "

On bazaars her comments include "It is almost impossible to describe these, but one description will do for all Except where the two Lawrences have been—there one can always recognise their traces—the bazaars are simply in the first savage stage of social savage life No regular system of drainage, no public latrines, or, if any, not sufficient establishment to keep them clean, no regular laying out of houses, overcrowding, bad ventilation, bad water supply, filth, foul ditches, stagnant water, jungle and nuisance, this is the account of all The country around is just 'one immense privy' " After further details she writes "Those who think I have given anecdotes and not fair illustrations, I refer again to the actual Stational Reports for further and fouler evidence "

We may conclude with the last section of her official letter which reads "In times past there has been no proper sanitary service in India No doubt there has been more or less of cleanliness, because wherever Englishmen go they attend to this in one way or another Otherwise there is just the same neglect of civilised appliances, water supply, drainage, etc , as used to exist in unimproved towns at home, notwithstanding repeated representations made by Sir Ranald Martin and other enlightened professional men In India, as at home, no good will be done unless it be made some competent person's express business to look to these things Even with our habits of self-government, it has been found necessary for the central Government to step in and assist local progress It is certainly of far greater importance for the Government of India to do so, seeing that there is no local self-government at all

“ There is, it is true, a kind of local sanitary government by commissions at the seats of the three Presidencies, the result of whose labours has hitherto been that no one of these three large and populous cities has as yet arrived at the degree of civilisation in their sanitary arrangements at which the worst parts of our worst towns had arrived, before sanitary reform sprung up in England at all. Bombay, it is true, has a better water supply, but it has no drainage. Calcutta is being drained, but it has no water supply. Two of the seats of Government have thus each one-half of a sanitary improvement, which halves ought never to be separated. Madras has neither ”

Thus Miss Nightingale, on the evidence placed before her, and one wonders what she would have written could she have visited Calcutta city in 1944 or, in that year, spent three weeks on tour in the mofussil regions of any of the provinces or centrally administered areas of India. “ Science moves but slowly, slowly creeping on from point to point ! ”

Scott's “ History of Tropical Medicine ” quotes a Municipal Commission which reported on conditions in Bombay in 1860 in the following vivid words. “ Go into the native town and around you you will see on all sides filth immeasurable, and at places almost unfathomable, filthy animals, filthy habits, filthy streets and loathsome trades, crowded houses, foul markets, foul meat and food tanks and swamps, and foul smells at every turn, drains unventilated and sewers choked with the garbage of an oriental city. Men, women and children, the rich and the poor, living with animals of all kinds and vermin, seeing all this and inhaling the deadly atmosphere and dying by the thousand ”. When reading an account like this it is important to remember that it would have been almost equally applicable to any of the larger industrial areas in Great Britain at the time it was written, the tragedy is that it has been possible to improve the one almost beyond recognition, while the other remains in many respects much what it was.

Now the Royal Commission referred to above recommended the appointment of Commissions of Public Health “ to give advice and assistance on all matters relating to the public health, and generally to exercise a constant supervision over the sanitary condition of the population ”. This was a logical step in view of the conclusion that no improvement could be anticipated in the health of the troops unless and until both urban and rural general sanitary conditions were radically reformed. These Commissions of Public Health had a very short life and soon gave way to Commissioners for Public Health in the majority of the provinces. In those days Bengal, being the premier province, the Surgeon-General with that Government acted as the adviser on medical matters to the Government of India, and in 1888 that official added to his titles that of Sanitary Commissioner with the Government of India. Thus, early in the day, were the interests of Preventive Medicine subordinated to those of Medical Relief, and entrusted to one who, by training and experience, had no special knowledge of or interest in the subject.

It is always easy to be wise after the event, but it would seem now that the

unfortunate start referred to above coloured the whole approach to the problem right down to the present day. Failing to get off the mark on the right foot, the exponents of Public Health never achieved either the service or the administrative position that the importance of this subject constantly demanded if real progress was to be made. We shall see later how an attempt was made to escape from clinical domination and how it fared. The failure that falls to be recorded cannot be laid, however, at the door of the officers of the Service, who interested themselves actively in this speciality in the days when efforts were being made to give it the priority its importance demanded. They were among the most distinguished of their colleagues, and had demonstrated in competition with them their pre-eminence, but they were defeated by a system and by the fact that the times were not ripe. Both of these factors were partly due to this false start and had India had then a Simon or a Chadwick, its present general health position might have been immensely different.

Plague appeared in India in epidemic form in the nineties, and this led to another review of the administrative system which is referred to in a Government of India note of the period in the following somewhat quaint terms: "The gradual spread of plague throughout the greater part of India compelled the local Governments to concentrate their energies on combating the disease and the question of reorganising the Sanitary Departments had to remain in abeyance." Throughout the end of the nineteenth and the early years of the twentieth century the *ultimate* responsibility for all health matters lay with the Government of India and not with the provinces. It did not devolve completely on those authorities until 1919. The extent, however, with which this responsibility became mixed up with certain political principles of the period is well illustrated by a Government of India Order as late as 1904 which, having explained how the Bengal Commission had drawn up a comprehensive system of sanitary administration of towns and districts at the same time "laid great stress on the necessity for working with discretion and not worrying the people by forcing on them measures, the value of which they could not understand." The inevitable conclusion from this document is that until such time as the millions of India were educated to appreciate the basic principles of sanitation they were to be permitted to sicken and die by the hundred thousand rather than be "worried." The same Order also says that sanitation should be "essentially a matter of local and municipal concern." Such it may well have been in the India of 1904, but under these conditions "the hungry sheep look up and are not fed."

By 1904 it had become so apparent that something drastic had to be done that the civil administration, ever loath to handle this problem, stirred sufficiently to achieve a separate appointment of Sanitary Commissioner with the Government of India. The immediate driving force behind this was the Plague Commission who, in their report published in 1904, laid down the principles on which they thought that the executive and scientific aspects of the problems of public health should be tackled. Had these principles been adhered to it is possible that the long subordina-

tion of preventive ideas to those of medical relief might not have occurred. Subordination is, unfortunately, the correct term, for there grew up a Service custom which was tolerated by the lay civil authorities both at the Centre and in the provinces, whereby there was allotted to officers on the clinical side, after careers as Civil Surgeons, positions such as Inspectors-General or Surgeons-General, which were much in advance of anything that could be achieved by the Service exponents of public health. The former even came to be known as Administrative Officers, yet it was the latter who in practice possessed the only medical qualification that is directly concerned with medical administration. In 1912 the die was finally cast and from then onwards it was inevitable that work in the preventive field would continue to suffer from the poor prospects, lack of executive authority and generally poor conditions of recruitment and service, all of which were the subject of a special memorandum in 1913, and none of which has been tackled effectively to date.

The principles of the appointment of Sanitary Commissioners, as laid down in 1904, which was later on to be upset by a Service clique, included the following (1) the post should normally be limited to a tenure of five years with powers of granting an extension if such were desirable, (2) the Sanitary Commissioner should not be subordinate to the Director-General, Indian Medical Service, and (3) no measures should be proposed which "will relieve local Governments of the direct control which they have hitherto exercised in sanitary matters or weaken their authority over the provincial sanitary establishments". In the noting on the appointment, stress was laid on the fact that the selection of an individual to fill the post of Sanitary Commissioner should not be restricted to any particular grade of the Service, but that the candidate best qualified should be eligible irrespective of his length of service or previous position. It was also pointed out that an important side of his work would be the organisation and direction of medical research throughout India, this representing activities in which the Director-General was not likely to be an authority. In making this appointment the Government still clung to the accepted idea of provincial autonomy in these matters, and the Sanitary Commissioner was to be an adviser and in no sense a real controller.

The position we are describing is well illustrated in a Review by one of the early Sanitary Commissioners in Madras—Colonel W. King, C.I.E., I.M.S.—who, after his retirement, wrote a small book called "Sanitation in Politics" ("Science Progress," Vol. 18). This pamphlet was reviewed in the *Indian Medical Gazette* of October, 1927, by a brother officer who underlined Colonel King's claims that at the very period of its inception control of sanitary medicine suffered because "important schemes promising and almost assured of success were curtailed, pigeon-holed, or rendered nugatory, because senior officers of the Service were jealous that junior officers were in a position to give independent advice to Government on important medical matters". Both the reviewer and the writer of the pamphlet were acknowledged authorities on the development of sanitary administration in the country and both claimed that since the start in the latter part of the nineteenth century there

had been a continuous effort made by high administrative authorities in the Medical Department to subordinate the Sanitary Commissioner's post, and indeed Colonel King refers scathingly to the head of the Service in 1911 who endeavoured to abolish the post of Sanitary Commissioner altogether, and "failing in this, succeeded in getting the latter official directly subordinated to himself". The very fact that a post of Sanitary Commissioner was necessary may have been held to underline the improbability, indeed the impossibility, of the Director-General being in any way an authority on matters of public health, and Colonel King is someone whose views cannot be lightly dismissed, for to him "really belongs the credit of instituting a public health service" when in 1894 he secured in Madras "the compulsory employment by all local bodies of none but trained sanitary inspectors".

At the same time it is difficult for us now in these later days to recapture the excitement which pervaded the clinical side of our profession at a time when no individual knew from day to day with what new weapon he would be armed on the morrow in the realms of bacteriology, pharmacology, medicine, surgery, anæsthetics, etc. The immense range of possibilities opening before the doctor in the period between 1880 and the onset of the First World War blinded the eyes of both the exponents of clinical medicine and lay administrators to the fact that the care of the sick of a subcontinent in the absence of an efficient preventive machinery is an impossibility.

It was into this atmosphere of almost open hostility from his Service colleagues, of ignorance and indifference from those local authorities whose charges he was in no way to "worry," that there was launched the first real venture in public health administration in India under the charge of Major (later Lieut.-Colonel) John Leslie, C I E , I M S. The appalling state of sanitation in the cities and towns of India and the complete absence of such in the rural areas certainly afforded the new Sanitary Commissioner scope for his considerable attainments. Hercules himself might have felt that his Augean stable affair was a very minor engagement beside the task that confronted Leslie and, even if assisted by Minerva, might have shrunk from undertaking the post of Sanitary Commissioner. Alas! Minerva was then, as afterwards, conspicuously absent from the Counsels of Administration at the Centre and the Provinces when public health was under discussion, and Major Leslie and his immediate successors soon found that they were ploughing a lonely furrow.

Leslie entered the Service in 1884, taking, as in the case of many of his successors in the post, first place and most of the prizes. He had seen service in Burma and did not like that country possibly on account of his being appointed to a post which concerned jail administration at Headquarters. He had studied in Paris and Munich, and was for some years Chemical Examiner and Professor of Chemistry to the Government of Bengal. In 1908 he added the D P H of Oxford to his other qualifications. Leslie's tenure of office lasted from 1904 to 1911 and special mention should be made of certain developments that occurred during this period with all of which he was intimately associated and all of which had a profound effect on future events.

Leslie may be said to have been primarily responsible for the establishment of a Central Bacteriological Department which, though actually sanctioned in 1900, did not come into full being till 1906. As part of this scheme certain laboratories were opened in Kasauli, Madras, Bombay and Coonoor, these being styled respectively the Central Research Institute, the King Institute, Gundy, the Haffkine Institute and the Pasteur Institute. The story of these laboratories, with mention of the galaxy of brilliant workers from the Service who staffed them, is told elsewhere in this narrative. It is important, however, to realise that from the very start research in India was closely and correctly integrated with preventive medicine activities. Another event of great importance during this period was the founding of the Indian Research Fund Association. This body first came into existence in 1907 though its position was not legally settled till 1911, and it is interesting to note that it is actually an older organisation than the National Research Council in England. The Association is a private body but derives its funds from public monies donated by Government who have, therefore, not unreasonably retained a share in the control of its affairs. The Member in Charge of the Portfolio of Health has always been the President, and the Public Health Commissioner the Secretary of the Association. There is an Advisory Committee of technical experts known as the Scientific Advisory Board, the Charman of which is the Director-General, I M S, with, as its Secretary, the Public Health Commissioner. The history of this Association is also to be found elsewhere in these pages but it is pertinent to comment on a tendency during recent years to reduce the connection between the actual laboratories in which the work is done and the Public Health Commissioner, on account of the attitude that has subordinated public health activities to those of medical relief. For example, the affairs of the Central Research Institute Laboratory at Kasauli are now handled primarily, somewhat surprisingly, in the office of the Director-General, I M S, in the Stores Section of that Office, while that most important child of the Association, the Malaria Institute of India, in so far as its so-styled "Public Health Section" is concerned was, as recently as 1940, placed under the administrative charge of the Director-General, I M S, and not that of the Public Health Commissioner.

Leslie retired in 1911, knowing, as did his immediate successors, that the first round at any rate had been lost, and the fact that in the years between his retirement and the end of 1924 the post of Sanitary Commissioner was held by no less than four Indian Medical Service officers is, perhaps, the clearest proof of the confused thinking that existed at this time on the relative importance of Preventive Medicine and Medical Relief and one is not surprised that it is this period that saw the establishment of that domination of Preventive Medicine by the Medical Relief Department that has done so much to retard the advance of Preventive Medicine in India.

Leslie's immediate successor was Lieut.-Colonel J E Robertson, C M G, C I E, C B E, I M S. Born in 1870, he entered the Service in 1896 and retired ultimately as Lieutenant-Colonel in 1915. He was an M A of Glasgow (1890),

1919, when he retired from the Service prematurely and took up an appointment under the League of Nations health authorities

His place was taken by Lieut -Colonel F. H. G. Hutchinson, C.I.E., I.M.S. This officer joined the Service in 1897 and, in 1907, obtained the D.P.H. and the Diploma in Tropical Medicine and Hygiene of Cambridge University, the former of which was then known as the Diploma in Sanitary Science, Public Health. Hutchinson had served with the China Expedition of 1900 and, on returning to India, was appointed Deputy Sanitary Commissioner, Southern Registration District, a post which he held with distinction for some years. In 1913 he became Sanitary Commissioner with the Government of Bombay and during his tenure of that post received commendation and the special thanks of his Government. As Sanitary Commissioner with the Government of India he attended the International Labour Conference held at Geneva in October to November, 1921, as a delegate of the Government of India. In 1922 the title of this post was changed to that of Public Health Commissioner with the Government of India, but the change was not accompanied by instituting that independence which had been held to be essential nearly a quarter of a century earlier. "A rose by any other name will smell as sweet," and the new Public Health Commissioner with the Government of India continued to be as powerless as had been the Sanitary Commissioners from 1912 onwards.

We have now brought our account of the history of Preventive Medicine in India in its connection with the Indian Medical Service to a stage at which we may pause before considering the important political developments that followed at the end of the First World War, and materially affected public health administration. Our account will be grossly ill-proportioned if it gives only the idea of chaos and indifference. It is true that this state of affairs prevailed both at the Centre and in provincial administration, but that is not the whole truth nor the whole story. In the first twenty-five years of this century many civil surgeons in the I.M.S. and many members of the Indian Medical Department devoted their energies and gave their lives to the attempt to control epidemics and improve in some slight way the unhappy condition of the rural population. Their colleagues in military service were also contributing to this end and the slow and steady improvement in the many small Cantonments that were scattered throughout India during this period, Cantonments that were in many cases the first home in India of the European officer, and the first indication to his Indian colleague of the standard that could reasonably be aimed at, represent object lessons which it would be a mistake to think were entirely without result. It is true that Cantonments were and continued to be far below the sanitary standards that should be achieved but, as a generalisation, they are years ahead of the neighbouring towns and villages, and one proof of this is their continued popularity as places of residence.

We have now arrived at the end of the period between the start of the century and the start of the second phase of events in public health administration when the Service had to deal with the situation created by the Montague Chelmsford Reforms.

In 1914 the Government of India had stated that "the general direction of a policy of public health must remain with the Central Government" but in 1919 they completely reversed this view and in that year handed this subject over lock, stock and barrel to the care of Provincial Governments, reserving to themselves only certain activities and depriving the country of the few co-ordinating influences in sanitation which it had hitherto enjoyed

Few nowadays would criticise the necessity for the devolution of responsibility in health matters, but that such occurred in India prematurely seems all too obvious when one considers the present state of sanitation and of the Preventive Medicine departments in all the provinces in India. If it is true that Provincial Governments were hardly ready to discharge adequately their responsibilities in this connection, it is even more clear that local bodies were not even really interested in it. Those responsible for the 1919 Reforms inasmuch as they were concerned with the transfer of public health, must have advocated such without any real recognition of the part public health and public health policy both can and should play in the economic and political life of a country. They built a political bed to which public health was fitted by lopping off its head. Nor can it be claimed that in the field of legislation the Central Government had made adequate provisions with regard to the health of the people. It is true that certain central legislation did exist, e.g. the Medical Act of 1886, the Births, Deaths and Marriages Registration Act of 1896, the Epidemic Diseases Act of 1897, and the Indian Factories Act of 1911, to mention a few from a somewhat meagre list. None of these Acts, however, afforded either to the Centre or to the Provinces that authority which had existed and exists in the United Kingdom in the various Acts referred to earlier in this section. It was, therefore, fortunate that from the middle twenties onwards the conduct of central public health administration was to be technically in the hands of two of the most able officers the Indian Medical Service has produced.

Major-General Sir James Graham, C B , C I E , I M S , held the post of Public Health Commissioner with the Government of India from January, 1924, till he retired in 1933. Born in 1875, he entered the Service in 1900 having graduated M B (Glasgow) in 1895 and taken the D T M in Edinburgh in 1897. He entered civil employment in 1908 in the United Provinces, where, after being Civil Surgeon for about a year, he was employed as Special Malaria Officer from the 12th May, 1910, to 2nd October, 1914, when he reverted to military duty in connection with the First Great War. During that war he served in several Divisions and was in the Mesopotamian Expeditionary Force (23rd December, 1916, to 23rd May, 1920) when he was appointed Director of Health Services, Iraq, under the Foreign and Political Department, which post he held till August, 1922. In addition he was Adviser to the Ministry of Health and the Council of State, Iraq, and was Inspector-General of Health Services, Iraq, from August, 1922, to May, 1923. He officiated as D G I M S from the 10th April, 1932, to 13th July, 1932, in a leave vacancy. He was awarded the C B in 1931 and was knighted in June, 1934. He had been

PLATE XVII



SIR JAMES GRAHAM

[Facing p 228

mentioned four times in Despatches during the war of 1914-18, awarded a Brevet Colonelcy and gazetted with the C I E , and had received many commendations, including the thanks of His Grace the Duke of Devonshire while Colonial Secretary, the High Commissioner for Iraq and the Prime Minister of the Interior and Adviser to the Minister of Interior, Iraq. He was a member of the Permanent Committee of the Health Section of the League of Nations at Geneva and was, for several years, President of the Advisory Council of the Singapore Bureau of the League. He attended several meetings of the Office Internationale d'Hygiene Publique in Paris as a Delegate of India, and was notified of the appreciation of the Secretary of State for India and of the Government of India for services rendered by him at these meetings. During his long tenure of the post of Public Health Commissioner, Graham built up the idea that advance in public health was essential and that such could be best obtained by remembering and acting upon the principle that the best advice on public health matters is to be got from a public health expert.

Fortunately, on Graham's retirement, the office devolved on a man no less brilliant, and with a character no less forcible. Colonel Sir Alexander Russell, C B E , was Public Health Commissioner with the Government of India from 1933-39. He entered the Service on the 24th July, 1907, being a graduate of St. Andrew's University, where he had obtained the M A and M B Ch.B. He had distinguished himself while on probation, obtaining, among many other awards, the Montefiori Prize at Millbank. He became a Doctor of Medicine with distinction in 1912 and took the D T.M (LIV) the same year. In 1913 he was at the Medical College, Madras, as Professor of Hygiene and Bacteriology, and acted during 1914 as Medical Officer of the City of Madras, for which he received the special thanks of the Corporation. In 1918 he took the D P H at Cambridge and in 1921 was appointed Sanitary Commissioner in Madras, a post which was later changed to that of Director of Public Health. He had been on special duty as Medical Assessor with the Royal Commission on Labour during 1929-30, and was a delegate in 1931 to the Office International in Paris, where his work received the special thanks of the Secretary of State for India. On Graham's departure on leave in 1932 he was appointed officiating Public Health Commissioner, which post he held until his own departure in the early months of 1939 after having received the honour of Knighthood in the New Year's Honours List for that year.

Once more it is not a question of selecting special items to be recorded as occurring during the tenure of a particular person, but rather the noting of how an individual, admirably trained in and enthusiastically interested in a particular subject, can succeed in spite of many difficulties in getting that subject placed on the administrative map. Long before he became Public Health Commissioner, Russell had shown during his career in Madras high qualities of administrative ability and that something inherent in him which makes a man respected by those with whom he has to deal.

Russell succeeded to this post towards the end of a period of financial stringency

SURGEONS TWOE AND A BARBER

in which both at the centre and in the provinces and in local administrations opportunity had been taken to curtail in every way expenditure in the field of public health, on account of the somewhat quaint view held by administrators that such is "non-remunerative". He had been, as already noted, specially connected with the Royal Commission on Labour. The report of that body appeared in 1931 and is now known generally as the Whitley Report. The Commissioners had done their work well, and a similar review conducted now would have little to add or to alter. The present highly unsatisfactory state of labour conditions in India's factories and mines is partly the result of this excellent report having been pigeon-holed and neglected. It seems to have been held to be "too expensive" to institute proper sanitary conditions in mines and mining communities, so as to check the rise and spread of hook-worm, "too expensive" to control dust hazards in industry, "too expensive" to institute proper exposure thereto of women and children as well as men, "too expensive" to have labourers employed on central government projects in decent conditions. The morbidity and mortality bill among employees that this policy produced is ignored, perhaps on the basis that there are "more where they come from".

Two particular advances during Russell's tenure must, however, be specifically noticed. The first was the establishment in Calcutta of the All-India Institute of Hygiene and Public Health, a venture which owed its success more to the general change of financial policy on the part of the Governments of India or Bengal than to any one person. The idea of this Institute was that it should be associated in the project. The second development was that it should have a training ground and a research centre for public health workers and a reference to this will be made later on. The Board was intended to act as a training ground and a research centre for public health workers and a reference to this will be made later on. The Board was intended to act as a training ground and a research centre for public health workers and a reference to this will be made later on.

This latter idea had in it seeds which might have borne considerable fruit for the advent of the Second World War. The Board was intended to act as those responsible for the conduct of public health in the provinces and central States, and those interested in this at the Centre.

Russell left India in 1939 and one can only assume that in his years of war which permitted the recall of every Indian Medical officer employed as the Head of a Provincial Public Health Department, *in situ* all those in the Service who were in charge of medical relief developments in India, and we may therefore close our account on reference to the most important event in health administration in India during the tenure of the successor to Russell, Colonel E. Cotter, appointed by the Government of India of a Health Survey Committee which, under the Chairmanship of Sir Joseph Bhore,

twenty-four members who represented between them political and social interests, representative of many classes and communities in the country. The terms of reference of the Committee are contained in a letter addressed to its Chairman from the Government of India dated 25th October, 1943, and may be summed up as instructions to make a broad survey of the present position in regard to health conditions and health organisation in British India, and recommendations for future developments. The report of this Committee was issued early in 1946 and as yet there has been no official pronouncement by either the Central or Provincial Government authorities as to the extent to which they propose to attempt to implement its recommendations. Without going into any detail we may say that these envisage a complete reorientation of health policy directed towards a unified health service in which there shall be realised and practised the principle that positive health for the masses of India and a reduction in the existing heavy mortality and morbidity of the people will only be achieved by the practice of sound preventive principles.

THE INDIAN MEDICAL SERVICE AND MEDICAL EDUCATION IN INDIA

Only a sketch of the development of medical education in India can be attempted in this place, quite incommensurate with the importance of the subject. Fortunately, the three larger Medical Colleges—Calcutta, Madras and Bombay—have celebrated their centenaries by the publication of well written and illustrated historical studies, to which reference can be made for further detail (104)

1. PRIOR TO 1857

It was during this period that the foundations of medical education were laid by the establishment of medical schools in the three great Presidential towns, which later developed into Colleges and were eventually affiliated to the Universities which were constituted around 1857.

We have noted previously that the earliest attempt to provide for medical assistance in a subordinate grade dated from 1812 when a G. O. of the 14th June in that year directed the training of European and Eurasian boys in Bengal with a view to their inclusion in a subordinate service. This order did not, however, make any arrangements for the training of Indian boys, which was not to be undertaken until some years had passed.

The order referred to directed that "the education of these boys is to be conducted under the immediate charges and management of the Surgeons of the General Hospital at the Presidency . . . according to a plan of instruction to be prescribed by the Medical Board." It is therefore clear that, from its very earliest beginning, medical education in India was in the hands of officers of the I.M.S. A class run on similar lines was initiated at Madras at about the same time.

Though instruction of a sort in the practice of the indigenous system of medicine was being given in the Sanskrit College and in the Madrasa at Calcutta in the early years of the nineteenth century, such teaching was entirely theoretical and without any practical background. The first Medical School on Western lines to be founded in India for the training of Indian doctors was established in Calcutta by a General Order of the 21st June, 1822, and the school so constituted was known as the "Native Medical Institution."

The Court of Directors at first were against the establishment of this school and ordered its abolition. The Indian Government objected and a heated argument ensued, culminating in a long debate at the East India House in June, 1826, at the end of which the order for abolition was cancelled. Similar medical schools had meanwhile been founded in Bombay in 1826 and in Madras in 1827. The school at Bombay, however, only remained open for six years.

The year 1833 marked the commencement of medical education on a higher scale, for it was in October of that year that Lord William Bentinck, the Governor-General, appointed a Committee charged with "improving the constitution and extending the benefits of the Native Medical Institution, and digesting a system of management and education calculated to give effect in both of these respects to the wishes of Government."

That Committee considered the following to be the main defects of the existing school —

"(1) The absence of a proper qualifying standard of admission, (2) scantiness of means of tuition, (3) the entire omission of practical human anatomy in the course of instruction, (4) want of regularity in the time of admitting students, (5) the shortness of the period of study, (6) the want of means and appliances for the convenience of private study, (7) the desultory character of the students' attendance on the practical means of instruction, (8) the inconclusive nature of the power and authority wherewith the Superintendent is vested, (9) the mode of conducting the final examination."

The main recommendations of the Committee were that the existing institution should be abolished and replaced by a college run on more up-to-date lines and, after a considerable division of opinion influenced largely by the educational controversy raging at that time which culminated in Macaulay's celebrated minute of 1834, that the medium of instruction should be English for, as their report emphatically declared,

"a knowledge of the English language we consider as a *sine qua non*, because that language combines with itself the circle of all the sciences and incalculable wealth of printed works and illustrations, circumstances which give it obvious advantages over Oriental languages, in which are only to be found the crudest elements of science, or the most irrational substitutes for it."

Consequent upon these recommendations an order was issued in 1835 abolishing the Native Medical Institution and the medical classes at the Sanskrit College and the Madrasa, and founding a new College to be run by the Education Committee with the *ex-officio* assistance of the leading doctors in the Service in Bengal. This

order (G G O 28 of 28th January, 1835), which is given at length by Crawford (II, 435-8), provided that "the benefit of this College shall be open to all classes of native youth between the ages of fourteen and twenty, without exception to creed or caste, provided they possess respectable connexions and conduct, and can read and write English and Bengallee, or English and Hindoostanee" The period of instruction normally was to extend over not less than four, and not more than six, years

The original staff of the Calcutta Medical College consisted of Assistant Surgeon M J Bramley as Superintendent, with Assistant Surgeon H H Goodeve as his only assistant Bramley's official designation was soon changed to "Principal" He died in January, 1837, and, after his death, the post of Principal remained in abeyance for nearly twenty years, until it was revived in favour of Surgeon James Macrae in February, 1856 The affairs of the College were, in the interim, managed by a Secretary

Goodeve was later appointed as Professor of Anatomy and Medicine and, in 1841, as Professor of Midwifery and Anatomy, a combination of duties which may appear remarkable to a more "aseptic" generation

The first Professor of Materia Medica and Chemistry was Assistant Surgeon W B O'Shaughnessy, who was to become, in later life, the first Director-General of Telegraphs Dissection, which had in the days of the original medical school been performed upon sheep, was first undertaken on the human body on 10th January, 1836, and the first Indian to break with tradition and handle the dissecting knife was Pandit Madhusudan Gupta, a Hindu of Vaidya caste, who had formerly been teacher of Medicine in the Sanskrit College

Since those early days the duties of the various chairs have undergone considerable changes to meet the requirements of the various examining bodies in London, and a number of new professorships have been created to cope with the growing advances in medical knowledge By 1912 there were as many as seventeen professors doing duty in the College

In January, 1839, the first students passed out from the new College Eleven appeared for examination and five were successful Uma Charan Sett, Dwarka Nath Gupta, Raj Kishen Deb, Nobin Chandra Mitra and Charan Datta These five were, without delay, provided with appointments as Sub-Assistant Surgeons in the district hospitals of Dakka, Murshidabad, Patna and Chittagong and in the Patna Opium Agency

It was in 1846 that the examining bodies in England gave their first recognition to the course of medical education provided at Calcutta, as qualifying for their examination The College continued to award a Diploma to its successful students until the University of Calcutta was founded in 1857, when the Degree of M D (and later that of M B) was instituted, together with a Licence in Medicine and Surgery (L M S)

In 1845 Assistant Surgeon H H Goodeve, the Professor of Midwifery (and

Anatomy 1) went on deputation to England with four students who were being sent to complete their education in that country. The best known of these was S. C. Chuckerbutty who, on his return from England, served as an uncovenanted officer from 1850 to 1854. He entered the I.M.S. at the first competitive examination for Commissions in 1855 and obtained first place on the list. The others were Dwarka Nath Bose, Bhola Nath Bose and Gopal Chandra Sil. In that year (1845), also, the course of instruction at the College was extended from four to five years, "a reform which," as Crawford rather pointedly remarks, "was carried out in Great Britain forty-five years later."

Before leaving the story of early medical education at Calcutta a few words must be added regarding the provisions made for the education of officers of the subordinate grades.

The school of the Native Medical Institution which had been originally founded to provide for this grade had been suspended in 1835, and the need which existed for this type of education was no longer met. In 1839, however, under a G.O. No. 136 of 12th August, a class was instituted for the instruction of "native doctors" for the Army, teaching being given in Urdu but, as soon as Vernacular schools had been opened in Agra and Lahore, the training of these "native doctors" was transferred to those schools.

It was not until 1847 that classes were formed at the Calcutta Medical College for Military Assistant Surgeons, who were, at that time, known as Apothecaries. These men were, after an apprenticeship of two years in military hospitals, permitted to attend a two years' course of instruction at the Medical College. Forty more years had to elapse before this period of military apprenticeship was abolished and candidates were posted to the College direct for a three years' course, while it was not until 1914 that the five years' course required by the General Medical Council was permitted to these students.

The arrangements which were originally made at Madras were somewhat different from those which developed at Calcutta. A medical school was established in 1835 and classes began in July of that year, though the school buildings were not actually opened until 1836. Two courses of instruction were given: one for the medical apprentices who were to become Apothecaries and later Assistant Surgeons, and another for the medical pupils of Indian birth who, on leaving the school, would be appointed Dressers and later become (1868) Hospital Assistants and finally (1910) Military Sub-Assistant Surgeons. The course in each case extended over two years. No students, other than those destined for military employment, were accepted until 1847, when a course of five years was instituted for qualification for the grade of Civil Sub-Assistant Surgeon. In that way the Madras Medical School, which had previously been on a level with the original Calcutta Native Medical Institution, became in fact a Medical College, though its name was not changed until 1850. The first batch of these "Civil" students qualified in 1852 and were awarded diplomas.

The original staff of the school consisted of a Superintendent—Surgeon William Mortimer—and an Assistant Superintendent—Assistant Surgeon George Harding. The title of “Principal” was bestowed, in November, 1858, on the third Superintendent James Shaw, who remained in office until 1862. By 1850 there were six chairs in the College and, in this case, Midwifery was united to Ophthalmology, and not to Anatomy. In that year, too, the course was extended to three years for the “native doctor” class and to four years for the “apothecary” class.

In 1857 the Vernacular Medical School was transferred to Vepery but, as this proved not to be a success, it was re-transferred to Madras in 1860. The senior course of instruction at Madras was recognised by the licensing board in England in 1856 and, in 1863, the University of Madras, which had been constituted in 1857, assumed the right to grant all medical diplomas in the Presidency.

The Grant Medical College in Bombay was opened in 1845 and was, in 1860, affiliated to Bombay University which had been established in 1857. Medical education of three grades was given at this College—to “native doctors,” to “apothecaries,” and to those who were to become Civil Sub-Assistant Surgeons. The classes for the “native doctors” were later transferred to Vernacular Schools when these had been opened at Poona, Ahmedabad and Haiderabad, Sind.

THE PERIOD 1857–1937

These were years of active development, during which Medical Schools for the instruction of doctors entering the subordinate grades, and also Colleges for the more extensive training of those who would qualify for a University degree, were instituted and expanded.

These Schools and Colleges were founded by the enterprise of officers of the I M S and manned by them entirely until such time as they had trained graduates to succeed them. Of officers willing to undertake this work there has never been a lack and it was not long before a flood of qualified doctors began to pour out from those institutions to meet the growing need for modern medical treatment throughout the provinces of India. It was natural that this instruction should not always be of a uniform high level, but there have been at all times some men who have proved themselves to be successful teachers either by virtue of natural gifts or from their great experience in the various branches of medicine.

In our review of the “I M S and Medical Research” we were able to point to the work of certain illustrious men, but it would be idle in this place to enumerate a long list of names. Teaching has this notable difference from research that in research it is the man rather than the Institution that counts, and the work of that man, maturing in the calm quietness of his laboratory, will often astonish and inspire the world. The educator, however, though his work brings him more essentially into the world of men, counts individually for less in the estimation of the public than the Hospital or the Institution which he adorns.

Teachers can and, indeed, often do affect and inspire those who come under

their influence and, if they are good teachers, that influence will live on in the lives of their pupils, but the sphere of it does not normally reach out so as to embrace the world. The name of many an officer who taught during those early years is even now mentioned with affection and respect by some old grey-bearded practitioner long after the officer himself has gone from the country and been forgotten by the rest of India. Yet it has been the often meagrely rewarded labours of those forgotten men, extending over many years, that have made possible the great step forward that was taken by the indigenous medical profession during the last hundred years.

It is in the normal order that we should first mention the Schools which were founded during this period, for the training of the "Licentiate" doctor. The list is a long one, and shows how powerfully the leaven worked, and how widely

	<i>Founded in</i>		<i>Founded in</i>
Agra	1853	Dibrugarh	1900
Lahore	1860	Rangoon	1907
Sealda (Calcutta)	1873	Lucknow	1912
Patna	1874	Amritsar	1920
Dakka	1875	Burdwan	1922
Cuttack	1876	Mymensing	1924
Poona	1878	Darbhanga	1925
Ahmedabad	1879	Chittagong	1930
Hyderabad (Sind)	1881	Jalpaiguri	1930

Of the above, the schools at Lahore and Patna have since reached the status of Colleges, while that at Lucknow has, in fact, had that standing since its foundation. The School at Lahore was transferred to Amritsar in 1920, and that at Patna to Darbhanga in 1925, when Colleges were established at the former places. A School was opened at Nagpur in 1867, but it was closed in 1884 and only re-opened, after a lapse of thirty years, in 1914.

Crawford remarks regarding the School at Agra, which was the first to be opened outside Calcutta, that "the school continued its work, with only a short interruption, throughout the Mutiny in 1857-58, although a member of its staff, Sub-Assistant Surgeon Wazir Khan, teacher of *Materia Medica*, became prominent among the rebels."

Two Schools were founded solely for the entertainment of women pupils at Madras and Agra in 1923. In all, by 1937, there were eighteen Government Medical Schools actively engaged in teaching and capable of accommodating 4,750 students.

The position in the larger cities requires some further elucidation. We have seen, earlier, that with the opening of the Medical College at Calcutta, the Vernacular classes were abolished but were restarted in 1852. In 1873, owing to lack of accommodation at the College, these classes were transferred to the Campbell Hospital which was situated at Sealda, just outside Calcutta, and the school which was opened there in connection with that hospital became known thereafter as the Campbell Medical School.

In Madras the position was similar. The three-year course which had existed for Hospital Attendance in the Madras Medical College were, in 1882, transferred to an auxiliary Medical School at Royapuram, but brought back to the College again in 1885. Finally, an entirely separate school was created at Royapuram in 1903 which, in 1922, became known as the Stanley Medical School in celebration of the fact that the then Governor, Sir George Stanley, inaugurated a five-year course in that year which placed its student probably on a level with those who study for the Medical Diploma of Great Britain.

If we turn now to the Medical Colleges for training the graduate doctor, we find that Calcutta, during this period, was employed in the improvement and extension of its College. Its course in Dentistry was started in 1861 and in Hygiene in 1862 while 1882 saw the admission of the first woman student. In 1881 the Government Dispensary Hospital was opened, in 1887 the Lying Hospital, and in 1891 an Eye Hospital. By 1892 the number of beds available in the Medical College group of the Presidency was 429. In 1906 the F.M.S. jurisdiction was abolished in Calcutta, and the duration of the course for the medical degree at the University was extended to six years.

The College of Medicine, which was affiliated to the University of Madras in 1863, was the first College in India to admit women students, which it did in 1875. Considerable structural and administrative improvement made during those years brought the teaching even at this University into the front rank.

The Grant Medical College at Bombay was affiliated to the University of Bombay in 1862. A Laboratory for Scientific Medical Research, presented by Mr. F. D. Petit, was added in 1891. Bombay had had, for many years, exceptional clinical facilities in the many hospitals endowed and maintained by the generosity of the wealthier members of the Parsi community.

We have referred to the establishment of Colleges at Lucknow in 1912, Lahore in 1920 and Patna in 1925, the last two of which replaced existing Schools which were moved to Amritsar and Dibrugarh respectively. There remains only to mention the Andhra College founded in 1923 at Vizagapatnam and the Lady Hardinge College for Women at Delhi in 1916. In all the above eight Colleges there was accommodation for 3,187 men and 393 women students.

We have previously dealt at some length with the vexed question of recognition by the General Medical Council of Great Britain of the courses of instruction given in India. This matter came very acutely to the front in 1921, and was only disposed of by the setting up of an Indian Medical Council in 1933.

In 1921 a great advance in medical education was made by the opening of a School of Tropical Medicine in Calcutta, largely owing to the efforts made by Sir Leonard Rogers to obtain in India a centre at which the immense material available for the study of diseases of the tropics might be profitably investigated. Finally, in 1932, owing very largely to the generosity of the Rockefeller Foundation, an Institute

for the study of the problems of Hygiene and Public Health in T was established also at Calcutta. This Institute has since then been in training workers in those fields, in addition to its work on research of Hygiene.

We have frequently noted that the main defect of the medical system in India has always been the attempt to produce two types of doctors, one well trained and less qualified than the other. We have noted, also, in the Subordinate Medical Services, how such a situation gradually evolved, perhaps, difficult to see how this evolution could have been otherwise from the historical standpoint. We have, at the same time, seen that there is a continual tendency to rise from the very early two-year course, with a diploma granted at the discretion of the Superintendent of the Hospital, through a three years to a four years' training in the Medical Schools for the lower division of the L M P (Licensed Medical Practitioner)—the so-called "Licentiate" and the five-, or even six-year course in the Medical Colleges for the graduate.

Nevertheless, the lower qualification continued to hold its place on into the recent past, for a less qualified doctor was obviously better than at all in the early stages of providing medical attention for a population of four million people. In 1935 Sir Cuthbert Sprawson, at that time Director of the L M P, wrote the following well-considered criticism of the position (quoted in *Indian Medical Review*, Delhi, 1938, pp. 92-94):

"There are 27 medical schools in India, they are under provincial or other local control with but little centralising influence and the staff of one school have no direct knowledge of what is being done in distant schools outside their own province. No one can have visited many schools without being struck by the difference in standard amongst them, by the variations in the equipment and staff. There is much more difference between the best and the worst school than there is between a good medical school and a medical college affiliated to a University."

"It is a matter of policy to be decided therefore whether we should have several or a few satisfactory schools and different provinces have followed different lines, while the same province has apparently changed its policy with the times."

"Which is the correct policy? It may be argued that many cheap doctors are wanted for the villages, to replace inferior practitioners or supply some sort of medical aid where none exists, but that it is no good sending expensive doctors there because the people cannot pay them, and it is better to send out registered medical men with some sort of qualification, however small, than to leave the rural population to ignorant and unqualified practitioners. It has even been suggested that we should multiply compounders and send them to the villages since doctors will not go and cannot get a living. This question was considered at length in Madras in 1929 when a Medical Education Committee was established that decided that the Presidency did not so much need more doctors as better doctors. Experience seems to show that the average medical man, if not properly educated when he is let loose on the world to practise his profession, himself tends to degenerate and become hardly better than the man he is intended to replace. It is only the exceptional man who, without a satisfactory education, can make good and educate himself until he becomes a good doctor."

THE PERIOD 1935 ONWARDS

We have noted above the tendency that there was towards the attainment of a position in which there would be only one standard of medical qualification in India. In 1935 the first step towards such a uniform standard was taken by the Government of Madras, when they ordered that, with effect from that year, there should be no fresh admission to the Stanley Medical School, or to the Medical School for Women at Madras. The Stanley Medical School was actually, shortly afterwards, converted into a Medical College accommodating both men and women students.

By 1937 the Medical School at Cuttack, Agra and Amritsar had become Colleges, thus completing the conversion in the Provinces of Madras, the United Provinces, Orissa and the Punjab, while proposals were in existence for the conversion of schools in the other Provinces.

It was in that year, also, that the Licentiates, by that time acutely conscious of the position in which they stood and which had not received recognition even by the Medical Council of their own country, protested so insistently to that Council that a resolution was passed to the effect that by 1947 all Medical Schools in India should have been abolished and that thereafter, there should be only one type of education conforming to the minimum standard laid down by the Council. This policy had been pressed upon the Council repeatedly by the Licentiates Association, at least since 1935 when, at its Conference in New Delhi, held under the auspices of the Government of India, such a course has been unannouncedly agreed to.

In 1937 the Health Survey and Development Committee appointed by the Government of India to conduct an exhaustive survey of all aspects of Medicine and Public Health in India, proposed far-reaching amendments to the then existing system of Medical Education. On the question of one portal of entering into the profession they were insistent, and that portal should, they considered, only be opened to a "basic" doctor trained equally in the methods of preventive and curative medicine. Detailed recommendations were put forward to convert into Colleges all existing Government Medical Schools, with the exception of one or two, the abolition of which was proposed, to raise all Colleges to what they considered to be, and laid down as, an ideal standard, to erect new Colleges of the same high standing, and finally to give such an enlargement to the whole scope of Medical Education that, if she were prepared to adopt them, India would, in the future, hold a place second to none in this branch of human endeavour.

With that great step forward the final goal came into view—the provision of 233,650 fully trained and fully qualified "basic" doctors. A great number, indeed, when we consider that at that time there were only 47,500 qualified medical practitioners in the whole of India.

1939-1945

I THE SECOND GREAT WORLD WAR

We have touched elsewhere in these pages upon the formation of the Indian Army Medical Corps in 1943, and the drive to obtain medical officers for the Army on emergency commissions. Reference to the tables at the end of this book will show that a total of 3,525 officers had been engaged on temporary commissions by the ending of hostilities. The grand total of I A M C officers at the end of the war stood at 6,507, while the strength of other ranks in that Corps rose from 12,000 at the beginning of the war to 153,000 in 1945, by which time the I A M C had become the second strongest corps in the Indian Army.

As regards the I M S proper at the outbreak of the war there were 366 officers on the military side, while in addition, 33 officers who had retired were re-employed, 30 were recalled to the active list, 30, who would normally have been superannuated, were retained during the period of the emergency, and a further 36 were re-employed on the Civil side, which had become sadly depleted by the draining away of every available active officer for war service. It is interesting to note that Captain J W A Parsons, previously a combatant officer, was recalled to the Indian Army, but as he had, since retirement, acquired a medical qualification, he was granted a special emergency commission in the I M S.

The following officers on the permanent cadre died of wounds or in action during this war —

Leopold Francis Burns, of gunshot wound in Iraq, 26th December, 1941, Alexander Clifton Craighead, at sea off the Australian Coast, 18th March, 1943, Sayid Wasiul Hasan Askari, while with the P A I Force, 21st October, 1943, John White, while on active service in Malaya, 20th November, 1943, William John Sivewright Ingram, while on active service in the Middle East, 18th June, 1944, and Joseph Morgan, of wounds in Italy, 10th August, 1944.

In addition to the above the following died of other causes while on service outside India during this period —

Percy Vivian Bamford, Gilbert Charles Retz, Robert Lewis Frost, and William Graeme Kennedy.

It was originally hoped that, in this narrative, there would be included some account of the work done in the various theatres of this War by officers of the I M S. Unfortunately, however, the records are not likely to be completed for some years and that is not now possible. The official medical historian of the Indian Army (Lieut -Colonel J G Thomson, I M S) has, meanwhile, kindly furnished a few notes which will be of interest, and it is hoped that, if a new edition of this book is ever called for, the omission may be remedied.

“ In the magnificently equipped hospitals which were set up in India, a bed strength of 11,121 for officers and 146,248 for other ranks was achieved This was made up as follows —

	<i>Hospital Beds</i>			
	<i>Officers</i>		<i>Other Ranks</i>	
	<i>British</i>	<i>Indian</i>	<i>British</i>	<i>Indian</i>
(a) Garrison Hospitals	5,044	6,077	16,817	43,581
(b) Field Hospitals in India and Overseas	Nil	Nil	19,400	35,000
(c) Base Hospitals	Nil	Nil	11,000	20,450
Totals	5,044	6,077	47,217	99,031

“ During the War there were mobilised from India well over 1,000 Field Medical Units, a total about 25 per cent greater than the total number of Field Medical Units supporting all British Forces in the last War

“ The provision of 1,500 specialists for these various types of units gave constant anxiety, but training courses which were set up produced over 1,200 specialists, without whom the medical services would probably have broken down.

“ At one time the A M T C Poona (Army Medical Training Centre) was training as many as 450 Medical Officer recruits at one time, and this Training Centre is still carrying on as the Indian Millbank

“ The conquest of malaria was, of course, the greatest triumph, with General Covell and Colonel Afridi, both of the I M S, taking the principal honours Thus, while within one month in 1942, nearly a quarter of the total force on the Burma front became casualties from malaria, and in 1943, before our efforts had time to bear fruit, out of every thousand men over a hundred were still being kept out of action by malaria each month during the malaria season, in 1944, the malaria casualty rate was reduced by half, in spite of more active operations, and in 1945, with our armies moving through very malarious country, the malaria rate was down to one-tenth of what it had been in 1943 ”

2 DISINTEGRATION

In order to understand the problems which arose during these fateful years it is necessary that we should make a short review of the Stores Organisation which had gradually evolved under the control of the D G I M S It has been no fault of the Service that it should have had attached to it in this way the full responsibility of organising and running effectively what amounted in fact to a large system of chain stores and factories

In peace-time the task of ensuring medical and veterinary supplies of suitable quality and approved pattern to military and veterinary hospitals and units of the Army in India was a relatively simple one. Medical Store Depôts were set up in the early nineteenth century at Madras, Bombay, Calcutta, Lahore and Rangoon and, prior to 1894, these were under the control of the local Surgeons-General and administered by officers known as "Medical Storekeepers to Government". To the Depôts at Madras and Bombay were attached factories for turning out most of the drugs and dressings which were required at that time, while the repair of surgical instruments was undertaken by local firms. In addition to its primary objective of maintaining supplies for the Army, responsibility for the supply of Civil Hospitals, Railway Hospitals, Charitable Organisations, etc., devolved also upon this department of the D G I M S organisation, so that in peace-time the proportion of supplies for civil to military was as three to one.

All went well in those days and, though methods may have been somewhat antiquated, complaints regarding supplies before 1914 were few—in fact, the reserves maintained for the Army were fully adequate for coping with emergencies such as might arise in Waziristan and other places on the Frontiers of India.

Consequently there was no need for the anomalous position of the D G I M S—a civil officer, who was responsible for supplying all the medical needs of an Army in action—to be called in question. The factories attached to the Depôts increased their output and their range and were run at considerable profit to Government. Just prior to the First World War the Medical Stores Depôts in India held on their shelves a two years' stock of imported items and a one year's stock of locally-produced articles and, thanks to that provisioning, the organisation was able to stand the shock of heavy demands coming from all the Eastern theatres of war up till February, 1917, when several ships conveying medical stores were sunk by enemy submarines. This event caused such a sudden depletion of the existing reserves that Government issued orders calling for the utmost effort to be made to utilise local products. Depôts and Factories doubled their output and local firms, without much previous experience and with no practical guidance, set their hands to the production of surgical instruments and appliances. It is greatly to the credit of the firms of Messrs Powell and Messrs Fyres of Bombay that they were able, working without steel and other materials of proper quality, to turn out instruments which enabled the Stores Department to overcome difficulties which it would have been impossible to surmount without their aid. An index of the task which was faced is given in the following table—

	<i>Pre war</i>	<i>Enlisted during war</i>	<i>Sent overseas</i>
Combatants of the Indian Army	194,000	721,000	552,000
Non-combatants	45,000	427,000	391,000
Animals	—	—	175,000

Hardly had the problems of the First World War been resolved by the Armistice when, on 6th May, 1919, war broke out with Afghanistan, and medical units for the

PLATE XVIII



SIR GORDON JOLLY

[Facing p 242

treatment of 340,000 men and 138,000 animals had to be equipped and supplied. It should, further, not be forgotten that the needs of Civil Institutions all over India had continually to be met throughout those war years.

In 1919 the Government of India appointed a Medical Services Committee to enquire into the question of the reorganisation of the Medical Stores Department. The recommendations put forward by that Committee were chiefly in regard to the extension of storage accommodation, the development of local industries, improvements in the emoluments and status of the staff, and the employment of research chemists in certain depôts. Consequent upon the experience of the previous war, arrangements were made for the holding of very considerable mobilisation reserves in India, both medical and veterinary.

Early in 1939 another Committee was appointed with the same object, but its recommendations, which were mainly applicable to peace-time conditions, were found to be of little avail in the rapidly changing conditions of the Second World War which so quickly followed their publication. During the twenty years that had passed since 1919 numerous contacts had been established, and maintained, with other institutions which had collaterally developed, such as the Imperial Council of Agricultural Research, with the Biochemical Standardisation Laboratory and with the various medical research institutions in India. As a link with the Indian Stores Department in London, two retired I.M.S. officers were posted to that department for supervising the supply of drugs, dressings and instruments.

During those years, for the purpose of considering the manifold problems of supplies of all kinds, and more especially for war, there existed an organisation known as the Principal Supply Officers Committee (India). A Sub-Committee of this body devoted its attention to Medical and Veterinary stores under the Chairmanship of the D.G.I.M.S. The organisation of this Committee was such that, on the outbreak of war, it became the nucleus Secretariat of the War Supply Board, with executive instead of merely advisory functions. As, however, the nature of medical supplies was peculiar and different, it was the intention of the War Supply Board that the advent of war should not interfere with the system of obtaining imported stores by the D.G.I.M.S. from the Director-General of the Indian Stores Department in London, which system was to continue in operation during time of war. Hence, on the 3rd September, 1939, when war was declared with Germany and the Principal Supply Officers Committee ceased to function, the Supply Department was born, but the provisioning of medical and veterinary supplies for the Indian Army still rested with the D.G.I.M.S.

It was fortunate, indeed, for the Service that it should have had at that time at its head a man so well fitted to fight the inter-departmental battles which were so quickly to develop. When Lieut-General Sir Gordon Grey Jolly took over the direction of the Service from Sir Ernest Bradfield on 30th August, 1939, war had become inevitable and, in addition to arrangements for normal peace-time supplies of medical stores, provision had to be made for supplying reserves for expeditionary

troops already located in the Middle and Far East, and for compliance with monthly indents in connection with the same. This colossal task had, further, to be combined with the construction, and fitting out to the latest equipment scales, of vast quantities of panniers, field-boxes, etc., for field medical units about to proceed overseas, and the equipment of hospital ships, ambulance trains, etc., on a scale previously undreamed of. The position as regards reserves was definitely less favourable than it was in 1914, owing very largely to a continual pruning down of the budget provision of the Medical Stores Department to a scale which was hardly adequate to meet even the current demands of military and civil customers. The actual position in the Depôts at the outbreak of the Second World War was that the Department held only a six-months' supply of stores purchased abroad, and a mere three-months' holding of local supplies, all based on peace-time scales.

The D G I M S. foresaw quite clearly two certain early developments (1) the cutting off from India of all normal sources of supply and (2) the tremendous expansion which was likely to take place in the near future both in the military and also many of the civil services. He personally pressed for sufficient funds to raise working stocks to double those already on the shelves and urged that, to enable him to cope with the inevitable flood of demands, an adequate Supply and Stores Section should be established in his office for provisioning abroad in the U S A and U K, and, more especially, in India. The position at the beginning of the war that out of 3,469 articles in the Vocabulary of Medical Stores, 2,391 were imported, 846 were indigenous and 232 contained imported ingredients. There is little doubt that if the original proposals of General Jolly to set up what would have been in effect the ordinary supply and distribution staff of a large manufacturing organ to deal with these problems had been allowed to operate, the whole supply picture which ultimately became extremely confused, would have been materially eased.

As it was, the necessary expansion of the Department had to be carried out piece-meal by the addition of specialist officers as and when sanction for their appointment could be obtained. The most important of those appointments was that of Dr J N Ray, the leading organic research chemist in India, to the post of Director of Production of Drugs and Dressings. Dr Ray's great knowledge and experience were invaluable in coping with the development of the indigenous production of many commodities, the supply of which from abroad was shortly to shut off during the duration of the war. The existing depôts were expanded and new ones while a new factory was erected at Amritsar. Indigenous firms were encouraged in the production of neutral glass for ampoules and other scientific uses. The Viceroy of Java, early in 1942, and the total elimination of supplies of quinine, the burden of developing effective substitutes fell upon the Department.

Meanwhile, the supply of surgical instruments was rapidly re-established. It is true that, in Sialkot in the Punjab, prior to the war, a cottage industry had developed in small, ill-equipped workshops by workmen possessing but a limited knowledge of such essentials as the selection of steel, heat treatment

“ We are aware that instruments produced even now are not always 100% satisfactory and it is unlikely that they will be. A few points not normally appreciated by the surgeons will explain why. Firstly, the basic steel used is manufactured in this country where the standard of steel making, particularly of high carbon steel, is not so good as in the U.K. The size of bar required for the manufacture of a pair of artery forceps is only $\frac{3}{8}$ in thick, the original steel for this may have been made as much as 16 in diameter, during the rolling process the continued heating and rolling causes changes to occur in the steel composition, and the final $\frac{3}{8}$ in bar may well be materially different from the specified material. It is not possible to inspect by metallographic examination every piece of steel produced and in routine inspection such faulty steel would not be detected. Instruments produced from such steel will not harden evenly during heat treatment. The finished instruments can often be immediately detected as unsatisfactory and several thousands have been rejected on this account. Others are not so obvious, are accepted and have faults develop or become obvious weeks or months later. Secondly, plating. The most obvious defect which is immediately apparent is inferior plating. Nickel plating is a science of its own, detailed knowledge of which is not quickly learned or easily imparted, satisfactory plating is dependent on numerous factors very difficult to control under Indian conditions, frequent chemical examination of the baths used, rigid temperature control, freedom from dust and dirt, etc. In addition the electric generators required are not available in sufficient numbers adequately to control the current density in all the baths used ”

The Medical Directorate, being unable to appreciate the immense difficulties met with in developing the supply of technical equipment of a highly specialised nature in India, apart altogether from surgical instruments, continued to find fault with the organisation set up in the office of the D G I M S to such effect that, in July, 1943, the whole responsibility for the planning and production of all medical and veterinary supplies was transferred to the Department of Supply. Though much was hoped from this move in actual fact no material improvement resulted and the D G I M S seized his first opportunity, in June, 1945, when it was considered that a position in the U.K. was sufficiently eased, to cancel all orders on the trade in India and transfer his demands *in toto* to the U.K. It is not for us here to enter the arena of those old battles, but it must be remarked that, in spite of the not always friendly criticism to which the D G I M S was subjected, the supplies which were ultimately forthcoming around 1944 would never have been received at all, but for demands foreseen and provisioned for in 1941 and early 1942.

The other main problem which overshadowed these years was the mobilisation of the medical profession in India to meet an enormous expansion of the Military Medical Services. As we have seen from our previous studies the fallacy had already been perpetuated that the civil side of the I.M.S. was maintained as a reserve for India. This had some justification in the days of “ bow and arrow ” warfare on the Frontier of India. But the experiences of 1914-18 had clearly demonstrated that no reserve which totalled at its best some 650 regular officers could be held to be in a position to furnish a reserve for global warfare. It is remarkable that in the years which followed that struggle no effective protest was made by the D G I M S to a Government which, in fact, allowed a declaration of war to remove from their posts in

Medical Service the majority of his active, capable and younger men, and leave in their place a few elderly and exhausted officers. As it was, in the Second World War, the Civil Medical officers having been thus recalled almost to the last man, the business of recruiting temporary I.M.S. officers for Emergency Commissions was again entrusted to the D.G.I.M.S. as head of the Service.

His most successful recruiting agents were the first regular officers who returned on leave to visit their old Medical Colleges, and who were able to explain there that life under active service conditions was not so bad after all, but the terms and conditions which were proposed to be offered to Emergency I.M.S. officers were considered at the start on an inconceivably niggardly scale by an Administration which claimed to be engaged in its death struggle. However, eventually, more reasonable counsels prevailed and the pay of an Emergency Commissioned officer and the general terms of his service were slowly improved until they compared not unfavourably with those offered to a regular combatant officer with no professional attainments whatsoever.

From the start there was considerable opposition to the idea that recruitment to the Medical Services should be through the D.G.I.M.S. office and not through the Adjutant-General's organisation which recruited engineers and other technical specialists. But the decision was a sound one, and there is no doubt that, in the long run, it was justified by results.

The first appeal was made almost entirely to Medical Graduates and, in the earlier years, practically no attention was paid to the Licentiate. The numbers which were ultimately recruited among the graduates are almost incredible. Practically all graduates in the country who were of an age considered suitable for recruitment volunteered and, of those, 25 per cent were accepted. It is believed that, in no other country in the world, was such a proportion reached by a voluntary system of recruitment.

The machinery whereby conscription of the medical profession in India could be introduced was set up in 1942 and completed in 1943. The decision to introduce it was actually taken, but was postponed and ultimately abandoned, as the voluntary response from the profession had been so considerable as to make it clear that conscription could, at the most, produce only a few more candidates per month.

In 1944 the "Licentiate" field of recruitment was examined in the light of military demands in India for medical personnel made on a scale which in peace-time might have been held sufficient to staff the Medical Services of the armies of the world. There is little doubt that the rather fantastic demands made at this stage by the Licentiates Association somewhat delayed an advance which was recognised on all sides as inevitable and, in fact, desirable—namely, the formation of one Medical Service for war, consisting both of graduates and of licentiates. Such a service came into existence with the publication of Army Instruction India No. 114 of 1943, which brought into being the Indian Army Medical Corps. That Instruction, though conceived and set out with the best intentions, contained anomalies and initiated difficulties which had not been remedied at the time when Japan laid down her arms.

sible for the maintenance of machinery whereby, in normal times, persons may be prevented from dying from preventable causes, with the proviso that such machinery should be capable of going into action quickly in such emergencies as those which inevitably accompany famine conditions. It is for other pens to assess whether this proviso was complied with.

The exact figures of those who perished at that time can never be known for, in many areas, the administrative machinery collapsed and in any case had never functioned with much efficiency in that province. Careful analysis accompanied by statistical enquiries on the spot suggests that an estimate of between one and a quarter and one and three-quarter millions may be held to be near the facts, that is of persons who died as a result of starvation and the conditions which accompanied it. It is interesting to add that, working in close collaboration with the Indian Research Fund Association, a relief team discovered a process whereby the resuscitation of extreme cases was possible by the use of certain protein hydrolysates—the first time in medical history in which success has attended an effort of this nature.

Probably the most beneficent and the least controversial measure undertaken during the tenancy of office of Sir Gordon Jolly was the setting up, in February, 1939, of the Tuberculosis Association of India, as the culmination of work which had been going on since funds raised in connection with the thanksgiving movement for the recovery from illness of King George V had been allocated for a campaign against that disease. The Association so formed aimed both at the training of various types of workers and also at the education of the general public in measures to be taken to combat this scourge, together with an extensive scheme for organised home treatment. Provincial Committees were set up, Sanatoria and Dispensaries opened and propaganda put out directed to give the widest publicity to the work of the Association.

When, on the 4th October, 1943, Sir Gordon Jolly surrendered the helm to Lieut-General Sir James Bennett Hance it seemed that the Service had weathered the worst of the storm. It had, it is true, lost, and apparently for good, the burden of provisioning and the responsibility for the supply of medical officers for the Indian Army in time of war, but the barometer was set fair and ideals had become the order of the day.

In the Yoga of the Tibetan Lamas it is held that the Soul, before it departs to the place Bardo, summons to itself all the faculties of the body and passes in review the events of the life which it is so shortly to leave, while speculating at the same time upon the future which awaits it, and so was it with the organism of Government in India in those days. Vast schemes were being put forward on all sides for post-war planning, in which Medicine naturally took by no means the least important part.

There is little doubt that the future will appraise the medical administration of that period in India chiefly by the fact that it was then that the Health Survey and Development Committee, presided over by Sir Joseph Bhore, held its sittings.



SIR JAMES BENNETT HANCE

That Committee was, indeed, not a Service Committee at all, although certain members of the Service sat with it. In fact, the twenty-five members composing it were carefully selected so as to be fully representative of the best talent in the practice of medicine and public health in India while, at the same time, the legislature was represented by outstanding public men. On his assumption of the Chairmanship of this Committee on 24th October, 1943, Sir Joseph Bhore received a directive from Mr. S. H. Y. Oulsnam, Joint Secretary to Government, requesting firstly a survey which should give a general picture of the present position and which would indicate and place in proper perspective the causes of the existing low level of health and, secondly, that he should "suggest various possible directions in which a solution may be sought". The directive terminated with the following paragraph —

"The Government of India are aware that the task which they have entrusted to the Committee is one of great difficulty. The great range and variety of problems which go to make the single problem of preventing and curing disease and raising the general standard of health of the community, the varying conditions and stages of development in different Provinces, and the special needs of urban and rural areas and of the industrial and agricultural populations, are all factors which make the subject to be investigated a matter of great complexity. In addition the difficulties must inevitably be enhanced by the present abnormal conditions. The Government of India are satisfied, however, that the time has come when the inquiry must be undertaken."

This Committee remained in being until the end of 1945 and, though the Report which embodied its findings will have been made available long before these words are printed, it is felt that the following note, specially prepared by Rao Bahadur Dr. K. C. K. E. Raja, who acted as Secretary during the whole life of the Committee, will find a suitable place in this narrative. This note gives a picture of the ideals which motivated the enquiry.

"In its survey of existing conditions, the Committee noted that the main causes of the low level of health in India included the general absence of a hygienic environment conducive to healthful living in most parts of the country, the wide prevalence of malnutrition and under-nutrition among the people, the high incidence of disease and total inadequacy of the health organisation, preventive and curative, to meet the requirements of the situation as well as certain social factors affecting large sections of the community, including poverty, lack of general and health education and certain customs such as early marriage and the practice of *pardah*. As regards nutrition, an ill-balanced and insufficient diet giving only about 1,750 calories per day is said to be 'typical of diets consumed by millions in India'. Cereals form 80 to 90 per cent. of the total food consumed by the vast majority of the people and the country's annual production falls short of requirements probably to the extent of a little over 20 per cent. In regard to other articles, such as milk, eggs, fish, meat, vegetables and fruits, which are necessary for providing a well-balanced diet, existing levels of production will have to be raised several times before the country's needs can be met adequately. Some idea of the prevalence of disease may be obtained from the fact that India's general death rate is about twice that of many other countries,

while the infant mortality rate is about five times that of Australia and New Zealand, two of the healthiest countries of the world. As a result of its survey, the Committee expressed the view that the existing health services, in both the remedial and preventive fields, were wholly inadequate to provide reasonable health protection to the large populations in individual local areas which have been entrusted to their charge. In this respect the position of the rural areas is definitely worse than that of urban centres and, as nearly 90 per cent of the people live in villages, the adverse effect of such inadequate provision on the public health of the country must naturally be of a pronounced character. Of the socio-economic factors mentioned earlier, reference may be made to lack of general education. It was shown by the 1941 census that the percentage of literacy in British India was only 12.5 per cent.

“In view of what has been stated above, the Committee realised that efforts to advance the public health cannot, if satisfactory results are to be achieved, be limited to the field of health administration. Although its own recommendations are naturally restricted mainly to this sphere and to certain allied subjects such as nutrition and physical and health education, it has stressed in more than one place that its own health plan as well as the schemes put forward by other committees dealing with the different aspects of community life should be proceeded with simultaneously, in order to secure a co-ordinated advance on a broad front in the national reconstruction programme.

“In its own limited field of future health services for India the Committee has attempted to incorporate the following principles in the plan it has put forward —

“(1) The neglect which the rural population has suffered in the past should be remedied at once and the proposed health scheme should, from the beginning, provide for this section of the community on as adequate a scale as practical considerations would permit.

“(2) The existing system by which curative and preventive health services are functioning separately and with a considerable measure of inco-ordination should be rectified. The doctor of the future should combine in himself both these functions in the interests of the community, particularly in the peripheral units of administration where the health services come directly in touch with the people. At higher levels specialisation in the various fields of health activity is essential if modern standards of service are to be attained. Nevertheless, co-ordination of such activities must be secured at all the stages of health administration—in the district, the headquarters of a Province and at the Centre.

“(3) A corollary to this would be that the training given to doctors and other health personnel should lay greater emphasis than in the past on the preventive aspect of their professional work and extensive changes in the existing training programmes would therefore be necessary.

“(4) Even the most generous provision for personal health services embracing both the remedial and preventive aspects of medical practice will fail to achieve the desired advance in the public health unless simultaneous progress can be made in

the provision of a healthy environment for community life. Hygienic houses, a safe water supply, a satisfactory system of conservancy, adequate supervision over the production, distribution, and sale of food intended for public consumption—these are some of the essential requirements for improving the health of the people.

“(5) The health services should be brought close to the people in order that they may derive full benefit from such services and the unit of administration should therefore be made as small as possible.

“(6) The comprehensive environmental and personal health services provided from public funds should be made available to all irrespective of their ability to pay for such services. The criterion for determining the nature and the extent of the service to be rendered to the individual should be the requirements of his physical or mental ill-health and not his ability to pay.

“(7) No health plan, however elaborately designed it may be, will fulfill its purpose adequately unless the active co-operation of the people can be enlisted for its day to day working. The underlying basis of such co-operation must be an intelligent appreciation by the people of the measures undertaken by the health authorities for the benefit of the community and provision for their active participation in those measures inasmuch as such participation is often needed for their effective execution.

“The Committee has drawn up a plan embodying these principles. It anticipates that, provided strenuous and unremitting efforts are made for the implementation of this plan, it should be possible to provide, within a period of about forty years, an integrated curative and preventive National Health Service, which embraces within its scope institutional and domiciliary provision for health protection of a reasonably high order. Each unit of administration (designated the primary unit) will cover about ten to twenty thousand people. Some fifteen to twenty-five such units will be brought together in the next higher type of organisation, the secondary unit, and about three to five of such secondary units will together constitute the administrative area for the district health organisation which will, for obvious advantages, be coterminous with the existing districts for other administrative purposes. The proposed health services will be based, at the primary and secondary unit levels and at the district headquarters, on a system of hospitals of varying size and varying grades of efficiency. These will provide treatment facilities of a progressively high order from the primary unit hospital upwards, while a system of ambulances and telephones will help to promote the fullest possible utilisation of the higher types of service available in the larger institutions even by the inhabitants of the remote villages. These hospitals will also take an active part in the preventive health campaign, the field organisations in respect of such services as those for tuberculosis, for mothers and children or for venereal diseases being closely linked with these institutions in order to ensure that domiciliary practice receives the full benefit of the treatment and diagnostic facilities that they can provide.

“The Committee's proposals also make provision for a wide expansion of

training facilities for health personnel and for the re-orientation of such training so as to include within its scope the newer conceptions of community health service.

“ In order to promote the active interest of the people in the proposed health programme, it has been suggested that Health Committees consisting of voluntary workers should be established in every village and that the health staff should attempt to secure, through the help of the members of these committees, the mobilisation of local effort for the improvement of environmental hygiene and other forms of health activity. A broad-based programme of health education covering all sections of the people has also been recommended as an essential step for ensuring the intelligent participation of the people in the health programme ”

Probably the finest conception which emerged from the discussions of the Committee was that which envisaged a Central Institute for the Training of Teachers and Research Workers, on the lines of the Medical School established by Johns Hopkins at Baltimore some fifty years ago, which has acted as a leaven in the U S A to permeate and transform medical education even up to the present day. This conception included both the training of the teachers who would teach the doctors of the future, and also the preparation of medical personnel who would go out into the world as missionaries of the progressive spirit in teaching, in research, in general health work and in administration.

In order to obtain first-hand information on these matters the Government of India deputed Lieut -General Hance and Dr C G Pandit, a prominent Indian research worker, in the winter of 1944-45, to make a tour of the principal institutions devoted to medical education and research in the U K and the U S A. This was the first time that the head of the Service had travelled abroad during his term of office, and there is little doubt that the contacts which he formed, and the exchange of views which was thereby made possible, had a profound effect in making the Service more real and more personal to many to whom it had previously been but a shadow, and almost a myth. Material of great value was brought back by the deputation, and reproduced in a report which will inevitably form the charter of any such Institute which may be set up in the future.

The third major constructive measure to which effect was given during this period was the setting up of a Committee appointed jointly by the Central Advisory Boards of Health and Education to consider a Report on Blindness in India, which had been prepared by Lieut -Colonel Sir Clutha Mackenzie, who had, for the purpose of collecting his material, been attached for special duty with the Government of India since January, 1943. Sir Clutha had himself been blinded during the war of 1914-18 and received his training at St Dunstan's under the late Sir Arthur Pearson. He is a recognised authority on the welfare of the blind and the compendious report which he produced for India will, undoubtedly, become a textbook and model for other Eastern countries.

SH Clutha has kindly contributed the following note on what he considered to be the essential points of his report.—

“ The Committee submitted its report in December, 1944. It has its two main and natural sections, one covering the fundamental field of prevention, and the other concerned with the humanitarian and economic task of giving those, whose blindness had not been prevented, a happy, normal place in society. It is obvious that the more complete preventive services are, the fewer will be the blind people for whom welfare services must be provided. The report pays tribute to the courageous pioneering efforts by devoted workers in both fields over many decades.

“ Under the I.M.S., in Government and mission hospitals and in private practice, a vast amount of ophthalmological treatment has been given. An interesting appendix to the Report states that cases of eye diseases being treated annually in the major provinces totalled 9,272,091. Nevertheless, an enormous field remains. Many factors contribute to the sum total of blindness and to the difficulties of adequate eye service, not the least of which is the reluctance of the people to accept modern treatment. The old grandmothers of the village are a force in the land, and what was good enough for their grandmothers is good enough for their grandchildren, and so into the eyes of the children, irritable with mild infections, go a medley of damaging ‘cures’—lime, alum, sugar, caustic soda, cow dung and even dust from the street. The *hakim* and the *coucher* are further menaces with the sanction of ancient practice behind them. The custom of *pardah*, the confinement of women to almost windowless, unventilated rooms, filled with the smoke of cooking fires, the beautifying of the eye by antimony and other substances, over-addiction to chewing betel nut are some of the old usages not to be overcome by the doctor alone. Preventable diseases contribute heavily to the sad toll of blindness, practically all among children. Smallpox is one of the greatest. Compulsory vaccination and re-vaccination should be a comparatively easy step, and extensive provision has already been made in this direction, but the deep conservatism of the grandmothers of India’s seven hundred thousand villages interposes a hurdle not easy to surmount. Dropping a little weak solution of silver nitrate into the eyes of every new-born baby would soon remove another tragic group of children who never should be blind. The training of *dais* (midwives) is proceeding, giving birth to children in an outhouse, attended by the old type of *dai*, a woman of low caste and none too clean habits, is still the custom. Keratomalacia, common where polished rice is the chief diet, is a disease easily prevented by a normal ration of vitamin A, *i.e.* milk, butter and animal fats or fish oils. In India the intense glare, the dust and flies of the hot weather place a heavy strain on the eye and predispose it to such troubles as glaucoma, trachoma and cataract. Add to this the habits of the people and the eye-damaging diseases, and we have a high incidence of blindness with its accompanying economic loss. The Report places the number at two million.

“ The steps recommended include a considerable increase in the number of eye hospitals and the establishment of many mobile units based on the eye hospitals

It has always been difficult to induce the villager to come to city hospitals and equally difficult to get the qualified doctor to go to the village where but small fees offer. Stress is laid, too, on the need for education in the care of the eye and for advancement in all those living conditions which will lead directly or indirectly to a lessening of eye disease. All this is already under way. Extended effort, more qualified men and more money are the essentials.

“ In the field of education, employment and general welfare of the blind, pioneering of modern methods began with the founding of the first school in Amritsar in 1887, and the Report records the existence to-day of thirty-two schools and societies, with a total roll of 1,212. Their story is the same—gallant efforts to make headway against deep-rooted conservatism and lack of support by Governments and public. The traditional means of livelihood for the blind, supported by religious injunctions has been and still is, alms-giving. The Report commends this spirit of generosity in India which has granted the blind the protection of this ancient ‘ social security system,’ but it asks that in future this generosity should be turned into channels which will give results more in keeping with the dignity of man, and bring about economic independence and more lasting happiness. The schools have shown how useful, self-respecting and capable the Indian blind man and woman can become. The pioneering stage of scattered and unassociated effort, weakly supported, is at an end. The second stage lies ahead, that of co-ordinating the isolated efforts, the great expansion of schools, workshops, libraries and other modern facilities, and, as the central foundation, the creation of a national body, the Indian Council on Blindness. ‘ Its very special function,’ states the Report, ‘ is to act in the several capacities of an advisory council to the Central, Provincial and State Governments, as a clearing house for all matters pertaining to blindness, as the driving force behind effort throughout India, as an executive body, itself administering a number of welfare services, and as the trusted agent of the State, the philanthropic public and the blind people themselves. Under the Council there should be two Committees, one dealing with the Prevention and Treatment of, as well as Research into, Blindness and the other dealing with the Welfare of the Blind.’

“ Stress is laid upon the important part to be played by the philanthropist and the voluntary worker. It has been by a close partnership of Government and voluntary effort that blind welfare throughout the world has achieved its finest results, where blind men and women walk to-day as free and happy citizens, well-dressed, with pleasant homes, with useful work by which to earn their living and with ample interests to fill their leisure hours. Throughout the War, thousands of the blind in Europe and America toiled in munition factories keeping pace with the sighted and earning the same wages. Many in India will become excellent industrial workers, while others, as they have done elsewhere, will take their place in the professions as teachers, lawyers, journalists and musicians, others will be typists and Braille shorthand writers, telephone switchboard operators, shopkeepers, masseurs and farmers, or they will be craftsmen in weaving, furniture-making, basket-making,

shoe-repairing, rope-making and mattress-making. A few may rise to great distinction as administrators, writers, orators, poets and leaders of thought. Blindness neither dulls the wits nor makes the hands useless. In fact, the blind man longs to put his latent capacities to use so that the dark, idle hours may be filled, and by his very concentration he sharpens those wits beyond their normal. His prayer is to be given a chance to earn his own living, and he will no longer have to rot in misery, clad in beggar's rags, pleading for alms with practised whine."

It will be noted how, during the tracing of this long story, inevitably and almost in spite of ourselves, it has gradually strayed out beyond the main current of the life of the Service into the land of ideals. Emerson considered that there was a stage in a culture in which a man was so conspicuous on the landscape that it was necessary to record of him that he guided up his loins and went from Dan to Beersheba. So also was it with us in our earlier pages, which were largely devoted to recording the doings of unusual men. Later on, we saw that the individual became relatively of less and less importance, and our story developed into a record of the "Acts" of the Service. Now it appears that even the Service itself is of less importance than the progress of the Art of Medicine in India, and it is on that note that we must end our survey of this period.

Meanwhile, the sands of the life of the Service were, indeed, running out and it appeared unlikely, at the end of 1945, to those of us who watched its slow decline, that it could long survive, as a separate entity, the amputation of its military cadre and the proposed formation of a Health Ministry with the concomitant setting up of separate *Provincial Medical Services*, and the abolition of any reservation of posts for officers of the Service.

In fact, toward the end of 1945, at a meeting of all administrative officers of the Service held in New Delhi, opinion was unanimously opposed to the re-opening of recruitment for permanent commissions and in favour of recommending the final closure of the Service. This recommendation could not at once be carried into effect as the *I.M.S.* came under the orders of the Secretary of State for India and could not be separately disbanded. It had to take its place alongside the other Services similarly situated and wait for the hour to strike.

In January, 1946, while there had been a relative increase in the number of temporary and emergency commissions in the Service, the total of officers on the permanent cadre had fallen to 420—lower than it had been at any time during the previous two centuries. The further decision to permit, after January, 1947, all regular officers with leave to their credit to proceed on such leave pending a retirement which could not then be much longer delayed, showed that this draining away which had so commenced must continue inevitably on to the end, as the Indian Medical Service, its traditions still unimpaired and with its story all but complete, waited for the order to vacate the stage which it had so long and so effectively adorned.

On the 15th August, 1947, with the transfer of power to the two Dominions of India and Pakistan, the Indian Medical Service ceased to exist

There will surely be few of those who have completed the reading of this story who would contest the claim that this great Service had erected for itself

“ a monument more enduring than brass and loftier even
than the majestic structure of the pyramids,—
a monument which neither the consuming storm,
nor the impotent fury of the fierce north wind,
nor the passage of the years, nor even the lapse
of ages would be able utterly to destroy ”

Horace, Carm , III, 30

Exegi monumentum ære perennius
Regalique situ pyramidum altius,
Quod non imber edax, non Aquilo impotens
Possit diruere aut innumerabilis
Annorum series et fuga temporum

ADDENDA 1948

1 In the general valediction to the Services given in both Houses of Parliament on the 7th August, 1947, the I M S received the following mention from the Prime Minister —

“ There is the Indian Medical Service, which has its own special place, and it is due to its pioneer work that India has now 50,000 medical practitioners. It has many very distinguished men, and it has made great advances in medical science ”

In the House of Lords, on the same day, the Secretary of State for India and Burma (the Earl of Listowel) amplified the foregoing somewhat exiguous appreciation

“ The Indian Medical Service, though its primary function has been the care of the civil and military services of the Crown in India, has also contributed substantially to the advance of medical science and has played a leading part in building up a modern system of applied medicine in India. Its research into the cause of malaria resulted in discoveries about the malarial mosquito which enabled the Panama Canal to be built. In the application of medicine it reduced the death rate from cholera in India by two-thirds, and its mastery of the diagnosis and treatment of many tropical diseases has brought relief to thousands of victims. It was the pioneer, and for many years the only source of medical education, and the father of the three medical colleges, which were founded in British India in the nineteenth century. The result of the pioneer work done by the Indian Medical Service is that India now possesses a well-organised medical profession of more than 50,000 practitioners ”

(Quotations from *Hansard* of that date)

2 In the *British Medical Journal* of the 23rd August, 1947, there appeared the following generous tribute from Lieut.-General Sir Alexander Hood, Director-General of the Army Medical Service —

“ In the course of last week the Indian Medical Service as a Service of the Crown passed away. With the other Indian Services it has received a vote of thanks from both Houses of Parliament. To the general public at home, the Indian Medical Service was a vague entity which had produced some famous men, but what it did for India is little realised even by medical men in this country.

“ Those of us who saw the work of that great Service knew that its credit rests not only on those of its members whose reputations were international, but on many others unknown in Britain whose names were household words in vast tracts of India. The debt India owes to the Indian Medical Service is beyond calculation, and we, whose medical schools produced so many of its members, should place on record some account of its achievements and the appreciation of the medical profession.”

3 Finally, and as a fitting epilogue to this account of the work of the Service, it remains to be noted that in January, 1948, Henry Edward Shortt, in a series of brilliant observations and deductions, demonstrated those phases in the life-cycle of the malarial parasite which had up till that time been unknown, and thereby completed the research into that disease which had been begun by Sir Ronald Ross during his service in the I M S in 1898, work which, contributed to by many hands and brains during the intervening years, has been instrumental in restoring health and happiness to countless millions of sufferers in all regions of the tropics.

A LIST OF THOSE OFFICERS WHO HAVE BEEN AWARDED THE FELLOWSHIP OF THE ROYAL SOCIETY

John Iryer	1697
John Zephaniah Holwell	1767
Patrick Russell	1777
Bussick Harwood	1784
William Blane	1795
John Corse (Scott)	1800
John Lloyd Williams	1801
Francis Buchanan (Hamilton)	1806
John Fleming	1813
Joseph Hume	1818
John Crawford	1818
Nathaniel Wallich	1829
William Russell	1832
Horace Hayman Wilson	1834
James Burnes	1835

SURGEONS TWOE AND A BARBER

John Forbes Royle	1837
John McNeill	1838
Julius Jeffreys	1840
James Annesley	1840
Henry Harpur Spry	1841
William Brooke O'Shaughnessy	1843
James Ranald Martin	1845
Hugh Falconer	1845
Thomas Thomson	1855
Robert Wight	1855
Henry John Carter	1859
Charles Murchison	1866
Joseph Fayrer	1877
James Edward Aitchinson	1883
George King	1887
David Douglas Cunningham	1889
Alfred William Alcock	1901
Ronald Ross	1901
David Prain	1905
Leonard Rogers	1916
Stewart Ranken Douglas	1922
Samuel Rickard Christophers	1926
John Stephenson	1930
Sydney Price James	1931
Robert Beresford Seymour Sewell	1934
John Alexander Sinton	1946
Henry Edward Shortt	1950

CITATIONS OF THOSE OFFICERS WHO HAVE WON THE VICTORIA CROSS

HOSPITAL APPRENTICE ARTHUR FITZGIBBON (13th August, 1861)

“ For having behaved with great coolness and courage at the capture of the North Taku Fort on the 21st of August 1860 On the morning of that day, he accompanied a wing of the 67th Regiment, when it took up a position within five hundred yards of the Fort Having quitted cover, he proceeded under a very heavy fire, to attend to a dhoolie bearer, whose wound he had been directed to bind up, and, while the regiment was advancing under the enemy's fire, he ran across the open to attend to another wounded man, in doing which he was himself severely wounded ”

SURGEON JOHN CRIMMIN (17th September, 1889)

“ Lieutenant Tighe, 27th Bombay Infantry (to the Mounted Infantry of which corps Surgeon Crimmin was attached), states that in the action near Lwekaw, Eastern Karenni, on January 1st

last, four men charged with him into the midst of a large body of the enemy who were moving off from the Karen left flank, and two men fell to the ground wounded. He saw Surgeon Crimmin attending one of the men about 200 yards to the rear. Karens were round the party in every direction, and he saw several fire at Surgeon Crimmin and the wounded man. A sepoy then galloped up to Surgeon Crimmin, and the latter joined the fighting line which then came up. Lieutenant Tighe further states that very shortly afterwards they were engaged in driving the enemy from small clumps of trees and bamboo, in which the Karens took shelter. Near one of these clumps he saw Surgeon Crimmin attending a wounded man. Several Karens rushed out at him. Surgeon Crimmin thrust his sword through one of them and attacked a second, a third Karen then dropped from the fire of a sepoy, upon which the remaining Karens fled."

SURGEON HARRY FREDERICK WHITCHURCH (16th July, 1895)

"The Queen has been graciously pleased to signify her intention to confer the decoration of the Victoria Cross upon the following officer, whose claim has been submitted for Her Majesty's approval, for his conspicuous bravery during the sortie from Chitral Fort on March 3rd last, as recorded against his name —

"Surgeon Captain Harry Frederick Whitchurch, Indian Medical Service. During the sortie from Chitral Fort of 3rd March last, at the commencement of the siege, Surgeon Captain Whitchurch went to the assistance of Captain Baird, 24th Bengal Infantry, who was mortally wounded, and brought him back to the Fort under a heavy fire from the enemy. Captain Baird was on the right of the fighting line, and had only a small party of Gurkhas and men of the 4th Kashmir Rifles. He was wounded on the heights at a distance of a mile and a half from the fort. When Surgeon Captain Whitchurch proceeded to his rescue the enemy, in great strength, had broken through the fighting line, darkness had set in, and Captain Baird, Surgeon Captain Whitchurch, and the sepoys were completely isolated from assistance. Captain Baird was placed in a dooley by Surgeon Captain Whitchurch, and the party then attempted to return to the fort. The Gurkhas bravely clung to the dooley until three were killed and a fourth was severely wounded. Surgeon Captain Whitchurch then put Captain Baird upon his back, and carried him some distance with heroic courage and resolution. The little party kept diminishing in numbers, being fired at the whole way. On one or two occasions Surgeon Captain Whitchurch was obliged to charge walls, from behind which the enemy kept up an incessant fire. At one place particularly the whole party was in imminent danger of being cut up, having been surrounded by the enemy. Surgeon Captain Whitchurch gallantly rushed the position, and eventually succeeded in getting Captain Baird and the Sepoys into the fort. Nearly all the party were wounded, Captain Baird receiving two additional wounds before reaching the fort."

CAPTAIN JOHN ALEXANDER SINTON (21st June, 1916)

"John Alexander Sinton, M B, Captain, Indian Medical Service. For most conspicuous bravery and devotion to duty. Although shot through both arms and through the side, he refused to go to the hospital, and remained as long as daylight lasted attending to his duties under very heavy fire. In three previous actions Captain Sinton displayed the utmost bravery."

CAPTAIN HENRY JOHN ANDREWS (22nd October, 1919)

"The late Temporary Captain, Henry John Andrews, M B E, Indian Medical Service. For most conspicuous bravery and devotion to duty on 22nd October, 1919, when as Senior Medical Officer in charge of Khajuri post (Waziristan), he heard that a convoy had been attacked in the vicinity of the post, and that men had been wounded. He at once took out an Aid Post to the scene of action, and approaching under heavy fire, established an Aid Post under conditions which afforded some protection to the wounded, but not to himself. Subsequently he was compelled to

remove his Aid Post to another position, and continued most devotedly to attend to the wounded. Finally, when a Ford van was available to remove the wounded, he showed the utmost disregard of danger in collecting the wounded under fire, and in placing them in the van, and was eventually killed whilst himself stepping into the van on the completion of his task "

A LIST OF OFFICERS KILLED IN ACTION OR ON ACTIVE SERVICE

- 1 PAUL, ST (STEPHEN ?) Killed in massacre at Pulo Condore, 10th May, 1705
- 2 The Surgeon of Anjengo factory (his name, unfortunately, has not been preserved)
Killed when the Chief, Gyfford, all the staff and most of the garrison of the factory were cut off at Attinga, 12th April, 1721
- 3 BURDON, JOSEPH Killed at Muskat, 18th November, 1771
- 4 WILSON, THOMAS Killed at Perambakam in second Maisur war, 10th September, 1780
- 5 CAMPBELL, GEORGE Severely wounded at Perambakam, taken prisoner, died of wounds at Arni, 18th September, 1780
- 6 RENNIE, ——— Surgeon, Madras detachment, killed in General Goddard's action of 24th April, 1781, capture of Lahar, in first Maratha war (*India Gazette and Public Advertiser*, 9th June, 1781)
- 7 MORRIS, HENRY Killed at Pongar, Maisur, in third Maisur war, 13th September, 1790
- 8 SPOTTISWOOD, WILLIAM Killed on board the *Lord Nelson* off Ferrol, 14th August, 1803
- 9 HOPPER, HENRY Killed in action with Mir Khan, Pindari, near Kunch, in Bandalkhund, in second Maratha war, 22nd May, 1804
- 10 BURGH, or BRUGH, JOHN Killed at Sikandra, near Agra, in Colonel Monson's retreat in second Maratha war, 29th August, 1804
- 11 LYON, THOMAS Killed in battle of Dig in second Maratha war, 13th November, 1804
- 12 NIVEN, HUMPHREY DONALDSON Killed at Sitabaldi in third Maratha war, 27th November, 1817
- 13 WINGATE, THOMAS Killed in battle of Corrygaum, or Koregaon, in third Maratha war, 2nd January, 1818
- 14 ANDERSON, ARCHIBALD Killed at the siege of Chanda in third Maratha war, 11th May, 1818 He was killed by the last shot fired from the fort before its surrender
- 15 WHIGHAM, GEORGE Killed at Alashkara, in Arabia, 10th November, 1820
- 16 GORDON, JOHN Killed at Zoar (Sohara), in Arabia, 2nd March, 1821
- 17 MAYSMOR, HUMPHREY Killed at Ramu, on Chittagong frontier, in first Burma war, 16th May, 1824

18. BRADON, HUGH. Killed by an arrow at Nanklau, Assam, in operations against the Khasias, 28th May, 1820
19. LORD, PERCIVAL BARTON. Killed in the battle of Parwandara, when a body of Shah Shuja's troops were defeated by Dost Muhammad, in the first Afghan war, 2nd November, 1840.
20. GRANT, GEORGE MORRISON. Killed in retreat from Charekar to Kabul in first Afghan war, 15th November, 1841.
21. DUFF, WILLIAM. Killed in retreat from Kabul, near Tezin, 10th January, 1842
22. BRYCE, ALEXANDER. Killed in retreat from Kabul, near Tezin on or about 10th January, 1842.
23. CARDW, EDWARD ROTHERHAM. Killed in retreat from Kabul, near Tezin on or about 10th January, 1842.
24. MITCHELL, FRANCIS RALPH. Killed in retreat from Kabul, near Tezin, on or about 10th January, 1842.
25. HARPER, EDMUND TOMKINS. Killed in retreat from Kabul, near Tezin, at Farchabad, 13th January, 1842.
26. BRICKWELL, THOMAS. Killed in a skirmish in Bolan Pass in the first Afghan war, October, 1842.
27. LYALL, ROBERT. Killed in quelling a riot in Patna city during the Mutiny, 31d July, 1857
28. WOODWARD, THOMAS HEWITT. Killed in siege of Delhi, 31st August, 1857
29. BARTRUM, ROBERT HENRY. Killed in the first relief of Lucknow, 26th September, 1857
30. DARBY, EDMUND. Died of wounds of head in Lucknow Residency, 27th October, 1857
31. SMYTH, WILLIAM BEATTY. Killed at Chypri Thal, Kurram Valley, in second Afghan war, 25th June, 1879
32. KELLY, AMBROSE HAMILTON. Killed with Sir Louis Cavangari, at Kabul, 3rd September, 1879.
33. CASSIDY, CHRISTOPHER CLEMENS. Died at Datta Khel, Lochi Valley, 22nd June, 1897, of wounds received on 10th June.
34. MAITLAND, CHARLES BRADLEY. Killed in action, Jubaland, Somaliland, 10th February, 1901
35. SIMS, FRANCIS WHEELER. Killed in action, Gumburru, Somaliland, 15th April, 1903
36. ATAL, PANDIT PIYARI. Killed, Flanders, 23rd November, 1914
37. SINGH, KUMAR ISDRAJIT. Killed, Flanders, 23rd November, 1914.
38. WOODS, JAMES. Killed, Flanders, 9th May, 1915.
39. REANEY, MICHAEL FOSTER. Killed, Gallipoli, 2nd July, 1915
40. WAISH, PATRICK JOSEPH. Killed, Flanders, September, 1915
41. SMITH, FRANCIS SHINGLETON. Killed, battle of Ctesiphon, Mesopotamia, 24th November, 1915.

- 42 PATEL, M B (Tempy). Died, December, 1915, of wounds received in battle of Ctesiphon, 26th November, 1915
- 43 SPIERS-ALEXANDER, ALISTER RALPH Killed, Mesopotamia, 9th February, 1916
- 44 STIEBEL, CHARLES (Tempy) Killed in advance on Baghdad, Mesopotamia, 2nd February, 1917
- 45 KHARAS, DARABOCHI RUSTOMJI (Tempy) Killed, Mesopotamia, 10th March, 1917
- 46 SINHA, ATUL KRISHNA Killed, Mesopotamia, August, 1917
- 47 MACGREGOR, RODERICK DEAR. Wounded and missing, France, 9th April, 1918, and never heard of again
- 48 DOBSON, EDWIN FRANCIS HORATIO (retired) Lost in S S *Hirano Maru*, torpedoed off North Coast of Ireland, 5th October, 1918
- 49 BHARGAVA, M P (Tempy) Killed, Waziristan, 25th October, 1919
- 50 ANDREWS, HENRY JOHN, V C (Tempy) Killed, Waziristan, 24th November, 1919
- 51 PIGEON, JOHN WALTER Killed, Samanah, Mesopotamia, 3rd September, 1920
- 52 HEPPENSTALL, CLEMEN HOYLE Killed, Tochi, N W Frontier, 11th December, 1921
- 53 MURPHY, PATRICK (retired) Killed in sack of Smyrna by Turks, 13th September, 1922
- 54 BURNS, LEOPOLD FRANCIS Died of gun-shot wound in Iraq, 26th December, 1941
- 55 CRAIGHEAD, ALEXANDER CLIFTON Died at sea off the Australian Coast, 18th March, 1943
- 56 ASKARI, SAYID WASIUL HASAN Died while with P A I Force, 21st October, 1943
- 57 WHITE, JOHN Died while on active service in Malaya, 20th November, 1943
- 58 INGRAM, WILLIAM JOHN SIVEWRIGHT Died while on active service in the Middle East, 18th June, 1944
- 59 MORGAN, JOSEPH Died of wounds in Italy, 10th August, 1944

APPENDIX 1

A LIST OF THE HEADS OF THE I M S FROM THE ABOLITION OF THE MEDICAL BOARDS IN 1858, TOGETHER WITH THE PRESIDENTS OF THE MEDICAL BOARD AT THE INDIA OFFICE SINCE THAT DATE, AND THE PUBLIC HEALTH COMMISSIONERS WITH THE GOVERNMENT OF INDIA

In consequence of Lord Dalhousie's Minute on the I M S in 1856, a single Director-General was appointed with effect from 12th November, 1857, in each Presidency on the abolition of the Medical Boards

On 1st February, 1859, the title of "Director-General" was altered to that of "Principal Inspector-General" This title was abolished in 1866

In 1873 the title of "Surgeon-General" was re-introduced, and in 1880 this was coupled, in the case of the Surgeon-General with the Government of Bengal, with the title "Sanitary Commissioner with the Government of India," and that officer ranked as the senior administrative officer of the three Services (Bengal, Madras and Bombay)

In 1895, when the three Services were amalgamated, the title of "Director-General" was again introduced, and the officer holding that appointment became *de facto* and *de jure* the head of the united Indian Medical Service

A professional board had been appointed in London to examine candidates for the Company's Medical Service as early as 1773, and this Board continued in existence until 1858, when the Crown assumed the Government of India In that year the Medical Boards established by the Company came to an end, but Sir James Ranald Martin was appointed as President of a new Medical Board at the India Office and also as Physician to the Secretary of State for India in Council

In 1916 the President of the Medical Board at the India Office was appointed to be Medical Adviser to the Secretary of State for India in addition, with the special duty of supervising recruitment for the Service.

DIRECTORS-GENERAL OF THE THREE PROVINCIAL SERVICES

<i>Bengal</i>	<i>Madras</i>	<i>Bombay</i>
John Forsyth, 1857	A N Magrath, 1857	B. P. Rooke, 1857

PRINCIPAL INSPECTORS-GENERAL

John McClelland, 1862	G Pearse, 1859	M Stovell, 1862
H A Bruce, 1865	R Cole, 1864	
	J Shaw, 1866	

W A Green, 1866 (Senior I G)	}	(During this period both Madras and Bombay had only one I G)
John Murray, 1869 (The <i>only</i> I G but con- sidered as titular head of the Service)		

SURGEONS-GENERAL

Sir John Campbell Brown, 1871
J F Beatson, 1875

SURGEONS-GENERAL AND SANITARY COMMISSIONERS WITH THE
GOVERNMENT OF INDIA

J M Cunningham, 1880
Sir Benjamin Simpson, 1885
W R Rice, 1890

DIRECTORS-GENERAL OF THE COMBINED SERVICES OF THE I M S

James Cleghorn, 1895	Sir Henry Symons, 1926
Robert Harvey, 1898 (died in office)	(the last officer of the old establishments to be head of the Service)
Sir Benjamin Franklin, 1901	Sir John Megaw, 1930
Sir Gerald Bomford, 1906	Sir Cuthbert Sprawson, 1933
Sir Pardey Lukis, 1911	Sir Ernest Bradfield, 1937
Sir William Rice Edwards, 1918	Sir Gordon Jolly, 1939
Sir Charles MacWatt, 1923	Sir Bennett Hance, 1943
	Sir Robert Hay, 1946

PRESIDENTS OF THE MEDICAL BOARD AT THE INDIA OFFICE AND PHYSICIANS TO THE
SECRETARY OF STATE FOR INDIA

Sir James Ranald Martin, 1864	Sir William Hooper, 1895
Sir James Fayer 1874	Sir Arthur Branfoot, 1903
	Sir Havelock Charles, 1913

MEDICAL ADVISERS TO THE SECRETARY OF STATE FOR INDIA

Sir Havelock Charles, 1916	Sir John Megaw, 1933
Major -Gen Blackburn Smith, 1923	Sir Ernest Bradfield, 1939
Sir Leonard Rogers, 1928	Sir Bennett Hance, 1946

PUBLIC HEALTH COMMISSIONERS WITH THE GOVERNMENT OF INDIA

Lieut -General John Leslie, 1904	Lieut -Colonel F H G Hutchinson, 1919
Lieut -Colonel J E Robertson, 1912	Major-General Sir James Graham, 1924
Lieut -Colonel W W Clemesha, 1915	Colonel Sir Alexander Russell, 1933
Major F Norman White, 1917	Colonel E Cotter, 1939

APPENDIX 2

TABLES SHOWING THE STRENGTH OF THE SERVICE AT VARIOUS TIMES DURING THE LAST CENTURY

The figures given on the attached tables have been taken from the Army Lists and are exact enough for purposes of comparison

The earlier figures, i.e. before 1912, were selected by Crawford to show the state of the Service at certain critical dates

July, 1861, including the last entries before the Service was closed to competition for four and a half years

July, 1865, just before the first admissions joined, after the closure.

January, 1871, just before the Service was closed for two years.

January, 1873, just before the first men, admitted after the closure, joined.

January, 1882, when the Service was at fairly full strength, after the Afghan War

January, 1887, when the numbers had fallen, by the reduction of the Army in 1882, and by four years' restricted recruiting

July, 1897, including the last men admitted to the three separate Services of Bengal, Madras and Bombay

From 1912 onwards the yearly state of the Service is shown as a table and also by a graph. It may be recalled that in 1864 the Secretary of State had fixed the strength of the I M S at 861. This figure was, however, never actually reached, in fact, the total is seen to have been usually below that sanctioned except in the periods covered by the two Great Wars

	<i>Bengal</i>	<i>Madras</i>	<i>Bombay</i>	<i>Total</i>
July, 1861	404	219	196	819
July, 1865	245	174	151	570
January, 1871	340	186	161	687
January, 1873	325	178	153	656
January, 1882	358	185	145	688
January, 1887	332	151	120	603
July, 1897	366	160	108	634

A calculation from the lists given in Crawford's "Roll of the Indian Medical Service" shows that, up to March, 1930, there had been a grand total of 6,586 officers who had served either with John Company or in the I M S. An analysis of these figures shows the number of Indians, who had served as medical officers prior to 1896, to have been 59, while those coming on to the list between that date and 1930 increased this figure by a further 278, and in addition the names of 4 Burmans appear on the Roll during that period

During the years 1930 to 1945 the names of 346 new officers were added to the list, of whom 67 were Indians and 2 Burmans

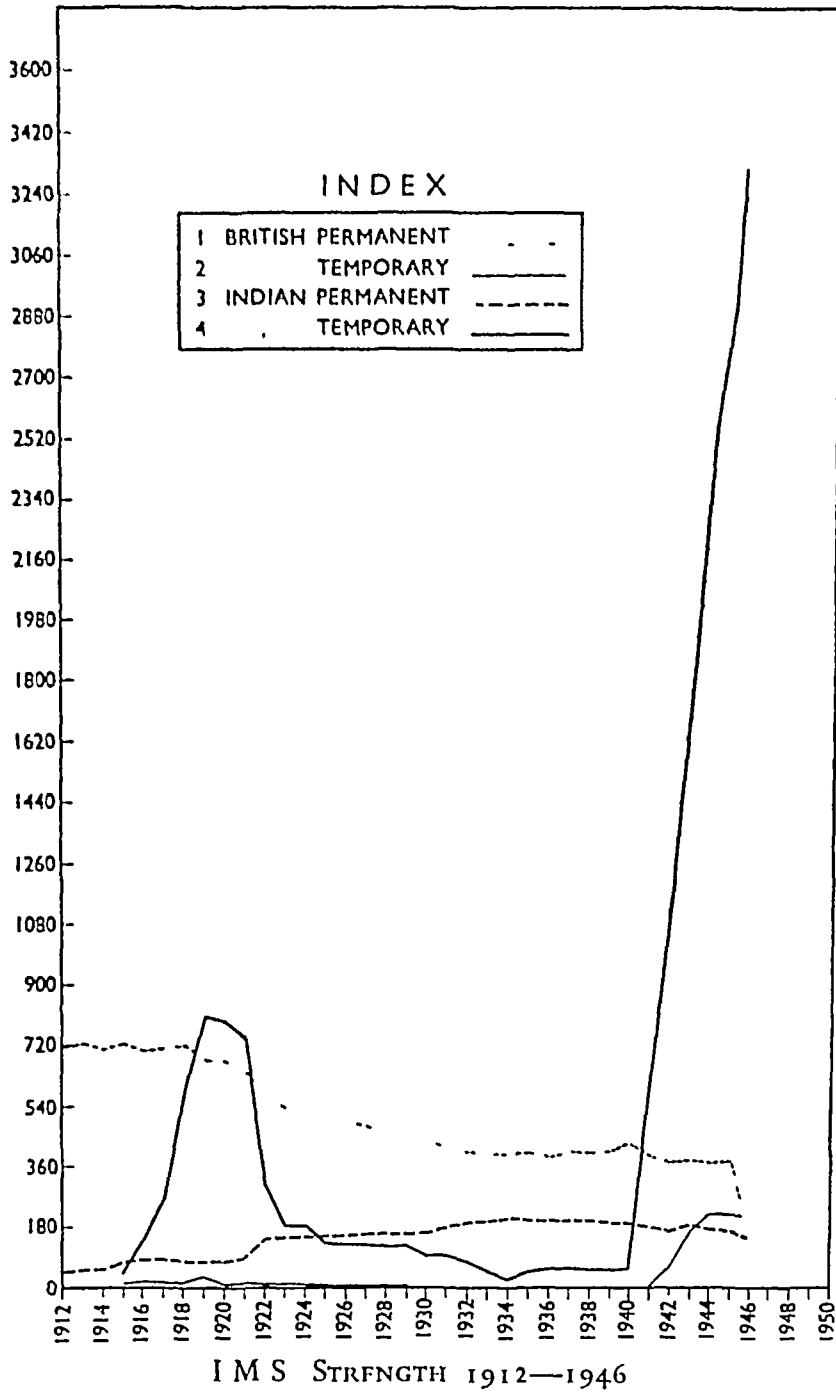
SURGEONS TWOE AND A BARBER

The Grand Total of all regular officers who have served in the Indian Medical Service (including those with John Company) during three and a half centuries is, therefore, 6,932

The attached graph includes the officers enlisted temporarily during the years 1912 onwards. It shows the peak figures reached during the two World Wars

OFFICER STRENGTH OF THE I M S FROM 1912 TO 1946

Year	Permanent			Temporary		
	British	Indian	Total	British	Indian	Total
1912	715	47	762	—	—	—
1913	721	50	771	—	—	—
1914	714	56	770	—	—	—
1915	724	72	796	5	48	53
1916	708	76	784	15	141	156
1917	712	77	789	19	267	286
1918	723	70	793	19	606	625
1919	683	76	759	33	805	838
1920	673	83	756	16	795	811
1921	641	90	731	20	736	756
1922	572	150	722	11	328	339
1923	538	158	696	9	181	190
1924	532	152	684	7	181	188
1925	527	151	678	4	144	148
1926	499	161	660	4	131	135
1927	486	163	649	2	137	139
1928	462	165	627	1	127	128
1929	454	167	621	1	128	129
1930	445	172	617	—	95	95
1931	414	187	601	—	87	87
1932	411	202	613	—	75	75
1933	400	202	602	—	51	51
1934	403	211	614	—	29	29
1935	412	207	619	—	45	45
1936	395	203	598	—	52	52
1937	411	209	620	—	56	56
1938	400	209	609	—	56	56
1939	417	198	615	—	55	55
1940	435	195	630	—	56	56
1941	393	184	577	8	544	552
1942	382	177	559	62	1,148	1,210
1943	385	186	571	174	1,809	1,983
1944	376	175	551	216	2,560	2,781
1945	366	173	539	216	2,907	3,123
1946	264	156	420	211	3,314	3,525



APPENDIX 3

A LIST OF REFERENCES TO PASSAGES QUOTED IN THE TEXT

A number of references have already been given as they occur in the story and are not repeated here

The sources given are not exhaustive, and many others may be found in Crawford's original "History of the Indian Medical Service" (Thacker and Co, London, 1914) by those who may wish to pursue the subject further. The reference, in the Preface, to the philosopher Sidrac is to that curious work—"The Book of Sidrac"—which was composed in the *langue d'oc* at Lyon in 1245. It recorded the replies made by a pretended philosopher of that name, who lived before the Flood, to questions asked him by a king—"de omni re scibili et quibusdam aliis". For the subject-matter of the introductory essay on the invention of the Indies, reference should be made to —

- F M Ford "Great Trade Route" (Allen and Unwin), pp 125-129
 J Carcopino "Daily Life in Ancient Rome" (Routledge), pp 169, 176, 177
 The many extracts from Winwood Reade's "Martyrdom of Man" are from Chapter III, "Liberty," which is a masterpiece of picturesque writing. There is a cheap reprint in the Thinker's Library (Watts and Co, London)
 Sir John Mandeville's "Travels" (Everyman Edition), p 60
 Sir George Birdwood's "Report on the Old Records of the India Office" (W H Allen and Co, 1891) is the chief source for this chapter. His historical survey gives information and pointers which it would be difficult to find elsewhere
 F H Garrison "History of Medicine" (Saunders, 1929), p 295

THE STORY ITSELF —

- 1 Crawford, Vol I, p 30
2. First letter book of the E I C, 1600-19, pp 91-94
- 3 Sainsbury Calendar, Vol III, p 202
- 4 Preface to his "Works," 1655, pp 8 and 9
- 5 "Surgeon's Mate," 1630

The main sources for Woodall's life are —

- 1 "Dictionary of National Biography," Vol LXII, pp 382-383
 - 2 "John Company," by Sir William Foster
 - 3 *British Journal of Surgery*, Vol XVI, p 7, 1928
- 6-9 References from Crawford, Vol I, pp 60 and 61. He gives the chief authority for Strachan's career as an article by Sir Henry Yule in the *Asiatic Quarterly Journal* for April, 1888 "Some Little-known Travellers in the East"
- 10-12 Quoted in Crawford, Vol I, pp 63 and 64

- 13 Crawford, Vol. I, p 71.
14. "Despatches from England, 1670-77." Published Madras, 1911, p. 25
- 15 Factory Records, Fort St George, Vol. IV.
- 16 Love. "Vestiges of Old Madras," Vol. I, p. 563.
- 17 *Ibid.*, Vol. II, p 68.
18. Colm Mackenzie M.S.S., Vol. LVI.
19. "Annals of the Honorable East India Company," by John Bruce, Vol. III,
p 154
- 20 Factory Records, Fort St. George, Vol. VII
21. *Ibid.*, Vol VIII.
- 22 Love. "Vestiges," Vol. II, p 156.
- 23 Quoted Crawford, Vol. I, p. 107.
- 24 *Ibid.*, Vol. I, p 108
- 25 *Ibid.*, Vol I, p 12
26. John Liver "New Account" London, 1698, pp 149-150
- 27 Love. "Vestiges," Vol I, p 216.
- 28 All the Consultations, Diaries and Letters in connection with the Embassy are
preserved and were edited by Professor C. R. Wilson in his "Early Annals
of the English in Bengal," Vol II, Part II, 1911—from which Crawford
drew his selections.
- 29 Letter to the Council at Fort William, January, 1757
- 30 Evidence by John Cooke before the Parliamentary Committee enquiring into
the affair.
- 31 Letter from Holwell to William Davis (Holwell, "India Tracts").
32. "Bengal in 1756-57," Vol. I, p xli
- 33 Broome. "History of the Bengal Army," pp 281-283.
- 34 Fort William Secret and Military Consultations, 24th February, 1766.
- 35 Proceedings of the Calcutta Medical Board, 14th September, 1786
- 36 Fort St George Cons, 2nd January, 1688
- 37 Madras Military Cons, 24th June, 1765
- 38 Abstracts, "Letters from Bombay," Vol V, 1785-99, p 145.
- 39 Proceedings of Calcutta Medical Board, 8th May, 1792
- 40 Cons of 9th September, 1785 (Crawford, Vol. I, p 205)
- 41 Proceedings, 17th February, 1773. (Crawford, Vol I, p 250)
- 42 Crawford, Vol II, pp 3-6.
- 43 Madras Military Letter, 21st October, 1807.
- 44 Crawford, Vol II, pp 26-30
- 45 G O dated 11th November, 1788 (Crawford, Vol I, pp. 253-260)
- 46 Minutes of Council in the Military Dept, 29th August, 1796. (Crawford,
Vol I, pp 262-270)
- 47 Love "Vestiges," Vol II, p 455.
- 48 Cons, 20th December, 1757

- 49 Fort William Public Cons , 16th October, 1707
- 50 Alex Hamilton " New Account of the East Indies. "
- 51 Cons , 21st January, 1762, and 11th October, 1762
- 52 Love " Vestiges, " Vol II, p 566
- 53 Crawford, Vol II, pp 68-69
- 54 Cons , 27th October, 1766
- 55 Corbyn, in *India Journal of Medical and Physical Science* (New Series Vol I, 1836, pp 127 and 346)
- 56 General Cons , 19th March, 1789
- 57 Chevers *Calcutta Review*, 1854, No 45
- 58 Crawford, Vol II, p 187
- 59 Madras Military Cons , 14th December, 1766
- 60 Crawford, Vol II, p 193
- 61 Military Cons , 6th June, 1787
- 62 Military Cons (Madras), 18th April, 1782
- 63 Crawford, Vol II, pp 200-201
- 64 Orme " History of Indostan, " Vol II, p 289, and Crawford, Vol II, pp 222-228
- 65 Crawford, Vol II, p 225
- 66 *Ibid* , Vol II, p 243
- 67 *Ibid* , Vol II, p 203
- 68 *Asiatic Journal*, Vol XXXII, New Series, August, 1840, p 305
- 69 Crawford, Vol II, p 252
- 70 McCosh " Medical Advice to the Indian Stranger " W H Allen and Co , 1841
- 71 " Life of Inspector-General Sir James Ranald Martin, " by Sir Joseph Fayerer (1897), pp 150-152
- 72 Letter from Court, 22nd February, 1764, from Long's " Selections from Unpublished Records of Government, " No 748, p 376
- 73 Selections from the Letters, Despatches and other State Papers preserved in the Bombay Secretariat Forrest, 1887
- 74 Calendar, 1635-39 p 261
- 75 Crawford, Vol II, p 66
- 76 *Ibid* , Vol II, p 269
- 77-78 *Ibid* , Vol II, pp 124 and 281, quoted from " Physician and Friend, " by George Smith (a life of Grant)
- 79 *Ibid* , Vol II, pp 283-284
- 80 *Ibid* , Vol II, pp 285-291
- 81 *Ibid* , Vol II, pp 309-310
- 82 *Ibid* , Vol I, p 456
- 83 Despatch from Secretary of State for India to Governor-General in Council, No 137, dated 9th August, 1907 (See Crawford, Vol II, pp 374-375)

- 84 Letter from Government of India in the Home Department to the Secretary of State for India, No. 20, dated 20th August, 1908. (See Crawford, Vol II, pp 375-377.)
- 85 Despatch from Secretary of State for India to the Governor-General in Council, No. 225, dated 11th December, 1908. (See Crawford, Vol. II, p. 378.)
- 86 This chapter is a reprint, with a few omissions, of Chapter XI, "General Remarks," from the second volume of Crawford's History. It was felt that any attempt at condensation would spoil the effective picture which Crawford achieved.
- 87 "Official History of the War—Medical Services, General History," Vol. IV, pp. 195-197. (The whole of this chapter is based on information extracted from the Official History. No special volume was published dealing with the activities of the Indian Medical Service.)
- 88 *Ibid.*, p. 199.
- 89 *Ibid.*, pp. 201-202.
- 90 *Ibid.*, p. 200.
- 91 *Ibid.*, p. 200.
- 92 *Ibid.*, p. 210.
- 93 *Ibid.*, p. 224.
- 94 *Ibid.*, p. 220.
- 95 *Ibid.*, p. 231.
- 96 *Ibid.*, p. 292.
- 97 *Ibid.*, p. 305.
- 98 *Ibid.*, p. 333.
- 99 *Ibid.*, p. 435.
- 100 *Ibid.*, p. 457.
- 101 *Indian Medical Gazette*, April, 1915, p. 155.
- 102 References for the period include the following—
 Minute of Evidence taken before the Royal Commission on the Public Services in India, relative to the Medical Services, 1915.
 Report of the Committee appointed by the Government of India to examine the question of the reorganisation of the Medical Services in India. (The Verney Lovatt Committee.) 1919.
 Report of the Committee appointed by the Secretary of State for India to enquire into the administration of the Army in India. (The Esher Committee.) 1920.
 Report of the Royal Commission on the Superior Civil Services in India. (The Lee Commission.) 1924.
 Report of the Committee on the Medical Branches of the Defence Services. 1933.
- 103 Refer to Editorial, *Indian Medical Gazette*, November, 1931.
- 104 Crawford gives the following additional references—
 "The Medical College of Bengal." Calcutta, undated and anonymous (probably 1839 or 1840).

- “ The Rise and Progress of Medical Education in Bengal ” A Lecture by Surgeon W C B Eatwell 1860
- “ History of the Medical Schools of the Bengal Presidency ” Assistant Surgeon K McLeod 1872
- “ Medical Education in India ” K McLeod *Caledonian Medical Journal*, January, 1908
- “ History of the Madras Medical College from its Foundation in 1835 ” Madras 1885
- As this section only deals with the “ I M S and Medical Education,” no references have been made to Missionary and other non-Government Schools and Colleges Full information regarding these and, also, more particulars regarding Government Schools and Colleges, may be found in Bradfield, *Indian Medical Review*, Delhi, 1938

APPENDIX 4

A LIST OF CERTAIN BOOKS AND ARTICLES DEALING WITH MATTERS BEARING ON THE HISTORY OF THE I M S

- 1 ANONYMOUS “ Autobiography of an Indian Army Surgeon ” Bentley, London, 1854
- 2 ANONYMOUS “ Diary of an Assistant Surgeon ” *Asiatic Journal*, 1843-44
- 3 BARTRUM, MRS R H “ A Widow’s Reminiscences of the Siege of Lucknow ” London, 1858
- 4 BEATSON, W B “ The Indian Medical Service, Past and Present ” Woking, 1902.
- 5 BIDDULPH, COLONEL J “ Pirates of Malabar ” London, 1907
- 6 BIDDULPH, COLONEL J “ Life of Stringer Lawrence ” London, 1901
7. BIRDWOOD, SIR G (with W FOSTER) “ First Letter Book of the E I Co ” London, 1893
- 8 BIRDWOOD, SIR G “ Report on Old Records of the India Office ” London, 1890
- 9 BRUCE, J “ Annals of the East India Company ” London, 1810.
- 10 BUSTEED, H E. “ Echoes from Old Calcutta ” London, 1888 and 1908
- 11 CHEVERS, SURGEON-MAJOR N “ Surgeons in India, Past and Present ” *Calcutta Review*, 1854
- 12 CUMBERLAND, R B “ Stray Leaves from the Diary of an Indian Officer ” Whitfield, London, 1865
- 13 DANVERS, F C “ Portuguese in India ” London, 1894
- 14 DANVERS, F C (with FOSTER) “ Letters Received by E I Co , 1602-17 ” London, 1896-1902.

India, Persia

1724
A

NEW ACCOUNT
 OF
East-India and Persia,
 IN
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 BEING
Nine Years Travels,

Began 1672 And Finished 1681

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TITLE PAGE TO FRYER'S "NEW ACCOUNT OF THE EAST INDIES AND PERSIA" (1698)

15. DOUGLAS, J "Glimpses of Old Bombay." London, 1900
16. Factory Records, Fort St George.
17. FAYRER, SIR JOSEPH. "Recollections of My Life." Blackwood, Edinburgh, 1900
18. Fort St George Consultations, in Colin Mackenzie, MSS, 1691-93.
19. FRYER, DR JOHN "New Account of the East Indies and Persia." London, 1698.
20. GRANT, ALEXANDER. "Physician and Friend," by Dr George Smith, C.I.E., LL D Murray, London, 1902
21. HAKLUYT, R "Principal Navigations, Voyages, Traffiques and Discoveries (1589)" 12 vols. Glasgow, 1903-05.
22. HARLAN, JOSIAH. "Memoir of India and Afghanistan" Philadelphia, 1842
23. HEDGES, SIR WILLIAM "Diary" (Edited by Colonel Yule, Hakluyt Society) London, 1887-89.
24. HICKEY, W. "Memoirs." 3 vols
25. HOLMES, T. R. E "History of the Indian Mutiny" London, 1883
26. HOLWELL, Z. "Genuine Narrative of the Deplorable Deaths of English Gentlemen and Others in the Black Hole, 1758"
27. IVES, EDWARD. "Voyage from England to India in 1754" London, 1773.
28. LIND, DR JAMES, R.N. "Essay on Diseases of Europeans in Hot Climates." London, 1808
29. LOVE, COLONEL H D "Vestiges of Old Madras, 1640-1800." (Indian Records Series), London, 1913
30. MALLESON, COLONEL G B "History of the French in India, 1674-1761" London, 1868
31. MANUCCI, N "Storia do Mogor, or Mogul India, 1653-1708" (Indian Texts Series), edited by W Irvine, B C S, London, 1907-08
32. MARTIN, SIR RANALD. Life of, by Sir Joseph Fayrer. Innes, London, 1897
33. MCNEILL, SIR JOHN Memoir of, by his Granddaughter Murray, London, 1901.
34. OAKES, CAPTAIN H. "Narrative of Treatment of English Prisoners in Mysore" London, 1785
35. READ, LIEUTENANT A. "Memoirs of War in Asia, 1780-1784" London, 1789
36. SAINSBURY, W N "Calendar of State Papers, Colonial Series, India, China, 1513-1634." 5 vols London, 1862-92
37. SAINSBURY, MISS E B. "Court Minutes of E I Co, 1635-1649." 3 vols. Oxford, 1907-12
38. TERRY, REV. E "A Voyage to East India." London, 1655.
39. THORNTON, SIR JAMES "Memories of Seven Campaigns, records of 35 years' service in the I.M Dept in India, China, Egypt and the Sudan" Constable, London, 1859.

- 40 WADD, W "Nugæ Chirurgicæ" London, 1824
 41 WHEELER, J T "Early Records of British India" Calcutta, 1875
 42. WHEELER, J T "Madras in the Olden Time, 1639-1748" 3 vols
 Madras, 1861-62
 43 WILSON, C R "Personal History of William Hamilton" *Calcutta Review*,
 April, 1903
 44 WILSON, C R "Early Annals of English in Bengal" 3 vols Calcutta,
 1895-1911
 45 WISE, T "Commentary on Hindu System of Medicine" Calcutta, 1845.
 46 WOODALL, DR J "Surgery, the Surgeon's Mate, etc" 3rd Ed London,
 1653

APPENDIX 5

A LIST OF A SMALL COLLECTION OF BOOKS WRITTEN BY I M S OFFICERS, PRESENTED TO THE ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE BY THE LATE LIEUT-COLONEL D G CRAWFORD, I M S (Supplied by courtesy of the Librarian)

This list is by no means a complete bibliography Crawford's "Roll of the I M S, 1615-1930" may be referred to for the full lists of works by individual officers

- ANNESLEY, J "Sketches of the Most Prevalent Diseases of India"
 ANONYMOUS "Autobiography of an Indian Army Surgeon"
 BADDELEY, P. F H "Whirlwinds and Dust-storms of India"
 BALFOUR, F "The Forms of Herkern"
 BARRY, J P "At the Gates of the East"
 BEATSON, W B "Indian Medical Service, Past and Present"
 BELLEW, H W "The History of Cholera in India, 1862-1881"
 BELLEW, H W "The Races of Afghanistan"
 BELLEW, H W "An Inquiry into the Ethnography of Afghanistan"
 BIRCH, E A "The Management and Medical Treatment of Children in India"
 BIRDWOOD, G "Report on the Old Records of the India Office"
 BLANC, H "Captivity in Abyssinia"
 BLANC, H "The Story of the Captives"
 BONAVIA, E "The Future of the Date Palm in India"
 BOULTON, H "A Hand-book for Officers of the Indian Medical Services in
 Military Employ"
 BUCHANAN, A "Malarial Fevers and Malarial Parasites in India"
 BURNES, J "A Visit to the Court of Sinde"

- BURT, A "A Tract on the Biliary Complaints of Europeans in Hot Climates."
- BUSTEED, H E "Echoes from Old Calcutta" (Second and Fourth Editions)
- CAYLEY, H "Guide to Travellers on the Maintenance of Health in Unhealthy Countries"
- CHARLES, T E "Dengue Its History, Symptoms and Treatment"
- CHEVERS, N "A Manual of Medical Jurisprudence for India"
- CHEVERS, N "A Practical Treatise of the Management of Diseases of the Heart"
- CHEVERS, N "A Treatise on Removable and Mitigable Causes of Death"
- CHEVERS, N "A Commentary on the Diseases of India"
- CHUCKERBUTTY, S G. "Popular Lectures on Subjects of Indian Interest"
- CRAWFORD, D G "A Report on the Sanitary Condition of the Hooghly and Chinsurah Municipality"
- CRAWFORD, D G "A Brief History of the Hughli District"
- CRAWFORD, D G "Roll of I M S. Appendices VIII and XIV List of Errata"
- CRAWFORD, D. G "Notes on the History of the Bengal Medical Service"
- CRAWFORD, D G "Hughli Medical Gazetteer"
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India "
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India "

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Dengue "
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- SMITH, H " The Treatment of Cataract "
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- SPENCER, D B " A Record of Indian Fevers with Charts "
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Common Medical Plants of India "
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INDEX

- Abd-ur-Razzak**, 7
Abrou, Alcxo da, 124
Abu Zaid of Siraf, 3
Adams, Robert, 43
Adams-Wylie, C H B, 100
Administration, 1918-39 186
Administrative Staff Officers, 155
Afghan Wars, 101
Afghanistan campaign, 242
Agra, Women's Medical School, 199
Air traffic health regulations, 249
Aitchison, James Edward, 148
Alcock, Alfred William, 148
Allan, Robert Dallas Dove, 120
All-India Institute of Hygiene and Public Health,
 199, 230
Amalgamation of I M S, 150, 186
Amboyna, massacre of, 21
 settlement at, 21
Amoebiasis, 195
Andaman Islands convict settlement, 145
Anderson, Archibald, 262
Anderson, James, 72, 91
Anderson, L A P, 180
Anderson, Sam, 180
Anderson, Thomas, 72
Anderson, William, 62
Andrews, Henry John, 201, 264
 awarded V C, 261
Ankylostomiasis, 195, 200
Antiscorbutics, 25
Apothecaries, 202, 204
Appointments, Military Administrative Medical,
 change in designation of, 157
Arab exploration of India, 3
Archer, Samuell, 37
Army Medical School, 108
 Training Centre, 241
Arnott, Neil, 130
Arthur, D, 180, 185
Asiatic Company, 13
 Society of Bengal, 147
Askari, Sayid Wasil Hasan, 264
Assistant surgeons, 204
 (Indian Cadre), 209
Atal, Pandit Piyari, 263
Atkinson, James, 117, 149
Attmer, Lewis, 15
- Bacteriological laboratories**, 225
Bal, N K, 180
Balfour, Edward Green, 148
Balfour, Francis, 65, 91
Bamford, Percy Vivian, 240
Banatvala, Hormusjee Eduljee, 186
Banestor, John, 15
Barber, C H, 180
Bartlett, Robert, 80
Bartrum, Robert Henry, 120
Bartrum, Thomas Henry, 263
Bazin, friar, 42
Beadon, Hugh, 262
Beatson, J F, 268
Beg, Sikander, 42
Beicao, Luis, 42
Bengal Company, 13
 establishment of trade in, 30
 factories in, 32
 medical establishment in, 71
 Medical Service, founding of, 64
 ranks in, 80
Bernier, Francois, 41
Bhargava, M P, 264
Bharucha, Rustam Hormasji, 185
Bhore, Sir Joseph, 250
Bilharziasis, 195
Binning, Robert Inglis, 185
Biochemical Standardisation Laboratory, 243
Bird, Robert, 121
Blackwell, R B E, 35, 36
Blind, welfare of, 256
Blindness Committee, 254
Bombay, 26
 hospitals at, 45, 83, 111
 medical establishment in, 71
 Medical Board, 75
 Medical Service, founding of, 65
Bomford, Sir Gerald, 268
Bonstead, R, 99
Bontius, Jacobus, 124
Boone, Henry, 25
Boughton, Gabriel, 29-32, 125
Bowle-Evans, C H, 190
Bowling, Henry Hawkins, 120
Bowling, John Pierce, 120
Bowron, John, 169, 207
Boyd, surgeon, 121

- Boyes, William Robert, 120
 Bradfield, Sir Ernest, 245, 268
 Branfoot, Sir Arthur, 107, 268
 Brickwell, Thomas, 263
 Briggs, Stephen, 72
 Bristow, John, 58
 British Empire Leprosy Relief Association, 216
 British Medical Association memorandum on recruitment, 187
 Broadfoot, Robert, 88
 Brougham, James Peter, 121
 Brown, Sir John Campbell, 268
 Browne, Samuel, 35, 36
 Bruce, Charles Key, 129
 Bruce, H A, 267
 Brugh, John, 262
 Bryce, Alexander, 263
 Brydon, William, 101, 120, 121
 Burette, John, 94
 Bulkley, Edward, 35, 54
 Burdon, Joseph, 262
 Burgh (Brugh), John, 262
 Burma campaign, I M S activities in, 241
 civil medical administration in, 155
 District, separation from Madras, 155
 Burns, Leopold Francis, 264
 Burtchaell Scheme, 190
- Cabot, John, 14**
 Calcutta, foundation of, 37
 hospitals in, 56, 85, 112, 159
 Lunatic Asylum, 76
 Medical Board, 73
 Medical College, 150, 232, 234
 medical education in, 237
 Native Hospital, 86, 201
 School of Tropical Medicine, 199
 siege of, 55, 56
 Campbell, Daniel, 72
 Campbell, George, 93, 262
 Campbell, John, 121
 Campbell Medical School, 236
 Campbell, Peter, 62
 Cape of Good Hope, 7, 8
 Caravans, 3
 Carcopino, 3
 Cardew, Edward Rotherham, 263
 Carere, Jean, 44
 Cassidy, Christopher Clemens, 263
 Castarede, Jean, 44
 Cataract, 195
 treatment of, 201, 202
 Catten, Monsieur, 42
 Cayley, H, 100
- Central Malaria Institute, 199
 Research Institute, Kasauli, 199, 225
 Ceylon, medical officers in, 41
 Chadaby, Richard, 54
 Chalmers, Charles Bonnor, 105
 Chambers, William Frederick, 77
 Chandni Hospital, 112
 Charles, Sir Havelock, 107, 268
 Chaudhri, B C, 89
 Cheek, George Nicholas, 89, 99
 Cheselden, William, 81
 Chevers, Norman, 32
 Child, Sir Josia, 23
 China Medical Service, 40
 Cholera, 195, 249
 research on, 212
 Chopra, Sir Ram Nath, 200, 216
 Christie, Thomas, 41
 Christophers, Sir Samuel Rickard, 200
 Chuckerbutty, S C G, 138, 139, 234
 Civil appointments in I M S, 157
 assistant surgeons, 209
 Medical Service, 191
 Clark, John, 129
 Clarke, John, 33
 Cleghorn, James, 268
 Clement IV, pope, 6
 Clemesha, W W, 226, 268
 Clifford, J J, 121
 Clifford, R C, 180
 Clugstone, Alexander, 94
 Cochuneal, 91
 Cogan Andrew, 33
 Cole, R, 267
 Colledge, Thomas Richardson, 41
 Collyer, Nathaniel, 120
 Columbus, 6
 Commissioners for Public Health, 221
 Commissions, fees for, 80
 grant of, 77
 of Public Health, 221
 Compagnie des Indes, 13
 Companies for development of India, 13
 Compton, Henry, 53
 Conti, 7
 Coppinger, H, 133
 Cosmas Indicopleustes, 3, 11
 Cotter, E, 230, 268
 Covilhan, Pedro de, 9
 Craighead, Alexander Clifton, 264
 Cranston, Andrew, 67
 Crawford, Dirom Grey, historian of the I M S, 149
 Crawford, John, 113, 117
 Crimmin, John, awarded V C, 149, 260
 Croke, Clement, 62

Ctesiphon, battle of, 176
 Culpeper, Nicholas, 125
 Cumberland, Robert Bakewell, 103
 Cunningham, J M, 268

Dabholkar, A. Y, 180
 Dalhousie, Lord, on improvements in the I.M.S., 134
 Danes in India, 13
 Darby, Edmund, 120, 121, 263
 Davies, Thomas, 73
 Davis, John, 14
 Day, Francis, 148
 Delhi, capture of, 49
 Embassy, 49
 Dental training, 237
 Diaz, Bartholomew, 8
 Dick, William, 76
 Dictionaries, 91
 Directors-General of Combined Services, 268
 of Provincial Services, 267
 Doak John 93
 Deben Edwar Francis Horatio, 185, 264
 Deverax Charles 201
 Depping Anthony, 120
 Douglas Robert, 37
 Dorer, Thomas 133
 Dorer's powder 133
 Dove, John 185
 Doyle, E. E. 107
 Drake, Sir Francis, 15
 Dress regulations, 95
 Dress uniform in India, 11
 Dyer, Sir Thomas, 2
 Dyer, William, 165
 Dyer, Thomas, 13

Entomology, medical, 215
 Estelle, James, 115
 Fisher Committee Report, 189
 d'Istomon, 42
 Examinations, competitive, for admission to I.M.S.,
 110
 Examining Boards, 69
 Eye diseases, prevention of, 233
 Ezra Hospital, 112, 237

Factory inspectors, 164
 Fairs, Italian, 5
 Famine, 249
 Fasken, W, 99
 Faucet, Thomas, 36
 Fayrer, Sir James, 268
 Fayrer, Sir John, 107
 Fayrer, Sir Joseph, 121, 146, 148, 149
 Fees for private practice, 159
 Fevers, treatment of, 119
 FitzGibbon, Arthur, awarded V.C., 149, 260
 Flanders, I.M.S., activities in, 171
 Fleming, John, 73
 Foryth, John, 207
 Fort, St. David, 36
 Fort St. George, establishment of, 35
 Forth, William, 97
 Fort St. George, 44
 "Fort St. George," 112
 Fort St. George, 171
 "Fort St. George," 17
 Fort St. George, 207
 Fort St. George, 225
 Fort St. George, 24
 Fort St. George, 22

- Grace, Henry, 68
 Glaucoma, 195
 Goa, capture of, 11
 hospital at, 45
 Goitre, 195
 Goldie, 74, 75
 Goldsmith, Oliver, 91
 Gonzales, Ruy, of Clarijo, 7
 Goodeve, H H, 233
 Gordon, John, 262
 Graham, James, 120
 Graham, Sir James, 228, 268
 Graham, John Colin, 120
 Grant, surgeon, 101
 Grant, Alexander, 130
 Grant, George Morrison, 263
 Grant Medical College Bombay, 150, 235, 237
 Gray, Alexander, 88
 Gray, George, 55, 57
 Grayfoot, Blenman Buhot, 185
 Green, W A, 268
 Greene, Christopher, 32
 Greenhow, Henry Martineau, 121
 Griffin, F W, 245
- Haffkine Institute**, 225
 Ham, John, 62
 Hamilton, Alexander, 90
 Hamilton, William, 49-50
 Hance, Sir James Bennett, 250, 268
 Hancock, Tyso Saul, 59, 60, 92
 Hansbrow, George, 120
 Harding, George, 235
 Hare, Edward, 119, 121
 Harihair-Bhat, Kalyanpur, 185
 Harlan, Josiah, 113
 Harper, Edward Tomkins, 263
 Harris, Henry, 91
 Harris, Horatio Philip, 120
 Harrison, Richard, 75
 Harvey, Richard, 55
 Harvey, Robert, 268
 Harwar, Robert, 38
 Harwood, Sir Bussick, 91
 Hastings, Warren, 33
 Haughton, C S, 180
 Hay, John Macdowall, 120
 Hay, Sir Robert, 268
 Health Survey and Development Committee, 230,
 250
 Heathcote, Thomas Godfrey, 120
 Heathheld, John, 34
 Hehir, Sir Patrick, 179, 180
 Herbert, Robert Francis, 185
- Hendley, T H, 149
 Henry the Navigator, 7
 Heppenstall, Clement Hoyle, 264
 Hill, Marcus George, 120
 Hill, Thomas Henry, 207
 Hinchley, Joseph, 92
 Hingston, Richard William George, 202
 Hinton, Henry Benjamin, 169
 Hinton, Thomas Lambert, 169
 Hinton, William, 169
 Holland as world power, 12
 Holwell, John, 56-8, 60, 91
 Home, A, 95
 Honourable East India Company *See* East India
 Company
 Hood, Sir Alexander, tribute to I M S, 259
 Hook-worm disease, 195, 200
 Hooper, Sir William, 107, 268
 Hopper, Henry, 262
 Horton, James Henry, 185
 Hospitals, 159
 in Bombay, 83, 111
 in Calcutta, 85, 112
 in India in 17th century, 45
 in Madras, 83, 111
 Houtman, Cornelius, 12
 Hugh, 11
 Hume, John Robert, 77
 Hume, Joseph, 89
 Hunter, John, 76
 Husband, George Staunton, 185
 Hutchinson, F H G, 227, 268
 Hygiene, training in, 237
- Ibn Batuta**, 4
 Imperial Company of Trieste for the commerce of
 Asia, 13
 Impey, Elijah, 114
 India, government of, transferred to Crown, 134
 "India in the 15th Century," 7
 Indian Army Medical Corps, 240
 formation of, 247
 effect on I M S, 248
Indian Journal of Medical Research, 216, 226
 Indian Medical Council Act, 198
 Indian Medical Department, 204, 206
 Indian Subordinate Medical Department, 204
Indian Medical Gazette, 149, 216
 Indian medical degrees, recognition by G M C,
 196, 198
 Indian Medical Service, administration of, 72
 administrative changes, 1865-96 140
 amalgamation of three establishments of, 150
 authorised strength of, 71

- Indian Medical Service, closure of, 258
 collaboration with Army Medical Department, 140
 conditions in early 20th century, 160
 first member of, 60
 Indian natives debarred from, 137
 officers awarded V C , 260
 granted substantive rank, 134
 killed in action or on active service, 262
 parliamentary tributes to, 258
 recruitment to, 68
 rules for admission to, 138
 strength of, during last century, 269
 terms of service in, 142
- Indian military hospitals, 195
 Indian Mutiny, I M S officers killed in, 119
 Indian natives in I M S , 138
 Indian Navy, 131
 Indian Research Fund Association, 196, 225
 Indian subordinate medical services, 202
 Infant mortality rate, 252
 Inglis, William, 57, 58
 Ingram, William John Sivewright, 264
 Inland Trades Association, 88
 Inspectors-General, Principal, 267
 Instruments, surgical, supply in wartime, 242, 244
 Iodine in treatment of hydrocele, 118
 Ireland, William Wotherspoon, 145
 Irvine, G B , 177
- Jackson, Rowland, 138**
 Jails, Inspector-General of, 155
 James, William Henry, 120
 Java, Dutch development of, 12
 Jengiz Khan, 6
 Jenkinson, Anthony, 14
 Jodrell, Sir Paul, 44
 Johnson, Richard, 14
 Johnson, Robert, 14
 Jolly, Sir Gordon Grey, 243, 268
 Jones, James, 180
Journal of the Malaria Institute of India, 216
 Jukes, Andrew Monro, 185
- Kala-azar, 195, 200, 201, 213**
 Kasauli, Central Research Institute, 199, 225
 Keats, John, 131
 Keegan, 168
 Keir, Archibald, 59, 92
 Kelly, Ambrose Hamilton, 263
 Kennedy, William Graeme, 240
 Keratomalacia, 255
 Ker-Innes, J H , 120
- Kerr, James, 63
 Khan, Wazir, 236
 Kharas, Darabochi Rustomji, 264
 Kidd, Captain, 133
 Kincaid, D , 28, 82
 King, A F W , 100
 King, Sir George, 148
 King, H H , 180
 King Institute, Kasauli, 225
 Kirk, Kinloch Winlaw, 120
 Kirwan, Ernest William O'Gorman, 202
 Knox, John, *snr* , 55, 57
 Knox, John, *jun* , 55, 57
 Koenig, John Gerhard, 90
 Kut, capture of, 176
 siege and fall of, 177, 180
- Lac dyes, 89, 91**
 Lady Hardinge Medical College, 199
 La Forge, 96
 "Lahore" clearing hospital, 171
 Laird, John, 94
 Lancaster, Sir James, 21
 Languages, 91
 La Palisse, François, 42
 Lawder, J , 99
 Lawrie, Edward, 185
 Leckie, John, 126
 Lee Commission, 190
 Legrenzi, Angelo, 42
 Leishman, Sir William Boog, 201
 Leishmaniasis, 195, 200, 201, 213
 Leprosy research, 216
 Leslie, Abraham, 40
 Leslie, John, 224, 268
 Leyden, John, 116
 Lind, James, 25
 Lindsay, William, 56
 Linguists, 91, 116
 Lister, Lord, 144
 Litholapaxy, 195
 Livingstone, Matthew, 39
 Lloyd, Dr , 43
 Lloyd, Richard Ernest, 202
 Login, Sir John, 114
 Lord, Percival Barton, 263
 Lorimer, Dr , 76
 Lovering, James, 21
 Lucas, Colley, 73, 94
 Lucknow, siege of, 121
 Lukis, Sir Pardey, 187, 268
 Luxmore, Thomas, 201
 Lyell, Robert, 101, 120, 263
 Lyon, Thomas, 262

- Mac Ara, Sir Robert**, 131
 Macardle, Andrew A F, 150
 Macauley, Daniel, 120
 McCarrison, Sir Robert, 201, 214
 McClelland, John, 267
 McCosh, John, 106
 Macedonia, I M S activities in, 175
 MacEgan, William Barker, 120
 MacGregor, Roderick Dear, 264
 McGrigor, Sir James, 100
 McHenry, James, 68
 Macintyre, W F, 121
 Mackenzie, Sir Clutha, 254
 Mackenzie, Hugh, 67, 99
 Mackinnon, Campbell, 120
 Mackinnon, Charles, 40
 Maclean, Charles, 129
 Maclean, William Charles, 130
 Macnamara, Nottidge Charles, 145
 McNeill, Sir John, 113, 149
 Macrae, Farquhar, 198
 Macrae, James, 233
 MacWatt, Sir Charles, 268
 Madras, early settlements at, 32
 General Hospital, 85
 hospitals at, 45, 83, 111
 Medical College, 150, 234
 medical establishment in, 71
 Medical Service, founding of, 65
 Magellan, Fernando, 11
 Magrath, A N, 267
 Matland, Charles Bradley, 263
 Mal de Loanda, 124
 Malaria, endemicity, 210
 Institute, 211
 research on, 195, 199, 200, 211
 Ross's work on, 147
 Survey of India, 201, 211
 Malaya, factories in, 21, 22
 Malle, Claudius, 42
 Mallory, —, surgeon, 33, 34
 Malnutrition, 251
 Maltby, Samuel, 120
 Mandeville, Sir John, 6
 Manucci, Nicholas, 42
 March, William, 90
 Marco Polo, 6
 Maritime laws, 127
 Marten, George, 76
 Martin, J S S, 180
 Martin, Sir James Ranald, 77, 104, 106, 108, 145,
 167, 286
 Martin, Jean, 43
 Martin, Monsieur, 42
 Martin, R V, 180
- Matrons, 83
 Maxwell, John, 29
 Mayo Hospital, 86, 201
 Maysmor, Humphrey, 262
 Mead, George, 69
 Medical Advisors to Indian Secretary, 268
 Boards, abolition in India, 76
 formation of, 72
 in England, 76
 presidents of, 268
 College Hospital, Calcutta, 112
 colleges, 196
 education, 150, 196, 231, 254
 in subordinate medical services, 209
 fees, 38, 159
 Missionary Society of China, 41
 research, 210
 organisation of, 199
 schools, 232
 Services Committee, 243
 stores, 242
 "Meerut" clearing hospital, 171
 Megaw, Sir John, 268
 Mein, Nicol, 94
 Meisters, Gregorius, 52
 "Memoirs of the War in Asia," 43
 Mesmerism in India, 115
 Mesopotamia, I M S activities in, 175
 Metcalfe, Francis Ralph, 263
 Midwifery, teaching of, 196
 Military titles granted to I M S officers, 151
 Minues, Jacob, 42
 Mohammed Tughlak, 4
 Moluccas, English trade with, 15
 Montague Committee on Reforms, 189, 227
 Moore, Thomas, 120
 Moorhead, Arthur Henry, 185
 Morgan, Joseph, 264
 Morris, Henry, 95, 262
 Mortimer, William, 235
 Mosquitoes, classification of, 200, 215
 Mouat, Frederick John, 145
 Moynihan, Sir Berkeley, 144
 Mukerjee, K K, 180
 Mukerji, Kalyan Kumar, 185
 Munro, Andrew, 54
 Murchison, Charles, 145
 Murphy, Patrick, 264
 Murray, John, 268
 Mutny, Indian, I M S officers killed in, 119
 Mysore Wars, 93, 94, 95
 Myssenden, Robert, 15
- Native Medical Institution, Calcutta**, 232
 Needham, Sir Richard, 197

- Newchurch, Christopher, 21
 Newcomb, C, 180
 Newenham, Arthur Wellesley Robert, 120
 Nicholson, Simon, 118
 Nightingale, Florence, on sanitary conditions in
 India, 220
 Nikitin, Athanasius, 7
 Niven, Humphrey Donaldson, 262
 Nuñez, Vasco, 11
 Nutrition research, 199, 201, 214

Officer strength of I.M.S., 269, 270
 Ogilvie, Sir Charles, 192, 193
 Ogilvie, George, 93
 Ogilvie, Sir W. H., 190
 Ogilvie Report, 192, 193
 O'Leary, John, 185
 Operations in pre-anæsthetic era, 115
 Ophthalmology, 201
 Orissa, English settlement at, 37
 Orta, Garcia da, 26, 124
 O'Shaughnessy, R., 139
 O'Shaughnessy, W. B., 233
 Ostend Company, 13

Paisley, Gilbert, 67
 Palestine, I.M.S. activities in, 174
 Pandit, C. G., 254
 Pardah, effect of, on health, 251, 255
 Park, Mungo, 129
 Partridge, Samuel Bowen, 121
 Pasley, Gilbert, 72
 Pasteur Institute, Coonoor, 225
 Patel, M. B., 264
 Patna massacre, 60
 Paul, S., 262
 Paul, Thomas Bond, 185
 Pay, 86, 128, 187, 188
 Pearse, G., 267
 Pearson, D. MacM., 180
 Pedro de Covilham, 9
 Peninsular War, I.M.S. officers serving in, 99
 Pensions, 78, 128, 155, 156
 Persia, factories in, 26
 Pharmacopœia of India, 148
 Philips, Thomas, 89
 Pichier, Andrew, 54
 Pigeon, John Walter, 264
 Pirates, 132
 Piso, William, 125
 Pitt, Thomas, 37
 Plague, bubonic, 195
 investigation of, 212
 Research Commission, 212

 Plague, epidemics of, 222
 Playfair, William Smoult, 146
 Plomer, John, 38
 Plummer, Dr., 34
 Pondicherry, 13
 Porcelain, 4
 Port Blair, 145
 Portugal, exploitation of India by, 10
 Pouget, Joseph, 69
 Practitioners, private, engagement of, 157
 Prain, Sir David, 148
 Presidency European General Hospital, Calcutta,
 159
 surgeons, abolition of, 140
 Prince of Wales Island Medical Service, 40
 Principal Supply Officers Committee, 243
 Private practice, 109
 Prostate, enlarged, 195
 Protein hydrolysates in relief of famine, 250
 Protozoology, 214
 Public Health administration, 217
 Commissioners, 268
 institutes, 199
 Pulo Condore, massacre of, 22
 Purdah, effect of, on health, 251, 255
 Puri, M. L., 180

Quarantine regulations for health traffic, 249
 Quinine, 119
 supplies in wartime, 248

Rabies, research on, 214
 Raine, William, 74, 93
 Raja, K. C. K. E., 251
 Ramier, Lakshminaraynapuram Subramaniam, 185
 Rangoon General Hospital, 160
 Ranken, James, 108
 Rao, Mysore Seshagiri Rao Krishnaswami, 185
 Ratnager, Sorab Dhunjabhoy, 185
 "Rawalpindi" clearing hospital, 171
 Ray, J. N., 244
 Reaney, Michael Foster, 263
 Recruitment, 192
 Regimental system, abolition of, 188
 Relapsing fever, 195
 Renaudot, Abbé, 4
 Rennie, —, 262
 Research, 199, 210
 Research institutes, 199, 210
 Retz, Gilbert Charles, 240
 Rice, William Roche, 144, 268
 Richardson, David, 113
 Robertson, Sir George, 166
 Robertson, J. C., 100

- Robertson, J E , 225, 268
 Robson, Thomas, 54
 Rogers, Sir Leonard, 199, 200, 268
 Rooke, B P , 267
 Ross, James, 91
 Ross, Sir Ronald, 147
 Rowcroft, G F , 186
 Roxburgh, William, 90
 Royal College of Surgeons of England, 105
 Royal Company of the Philippines, 13
 Royal India Asylum, 108
 Royal Society, I M.S officers elected to fellowship of, 259
 Royal Victoria Caste and Gosha Hospital, 112
 Russell, Sir Alexander, 229, 268
 Russell, Patrick, 91
 Russell, Sir William, 149
 Rutherford, Thomas Corrie, 185
- St Helena Medical Service**, 39
 St Hilaire, Jean Baptiste de, 44
 St Mark's fair, 5
 Salaries, 86, 128, 187, 188
 Salisbury, H F , 180
 Salter, Ralph, 21
 Sanitary Commission Report (1871), 139
 Commissioners, 150, 155, 224, 268
 appointment of, 223
 Officers, 155
 Sargent, Alfred George, 185
 Saunders, Robert, 90
 School of Tropical Medicine, Calcutta, 237
 Scott, David, 121
 Scott, John, 77
 Scottish East India Company, 13
 Scurvy, 124
 Woodall's observations on, 25
 Sea Service of East India Company, 122
 Service, conditions of, 187
 Sewell, Robert Beresford Seymour, 202
 Shaw, J , 267
 Sherman, Bezaliell, 33
 Shoolbred, John, 112
 Shortt, Henry Edward, work on life-cycle of malaria mosquito, 259
 Shortt, John, 148, 207
 Sighelmus of Sherborne, 14
 Sime, Francis Wheler, 263
 Simon, Sir John, 217
 Simpson, Sir Benjamin, 268
 Singh, Kumar Indrajit, 263
 Sinha, Atul Krishna, 264
 Sinton, John Alexander, 201
 awarded V C , 261
- Smallpox, 255
 epidemics, 249
 Smith, Blackburn, 268
 Smith, David Boyes, 114
 Smith, Francis Shingleton, 263
 Smith, Henry, 168, 201
 Smith, Thomas, 120
 Smyth, William Beatty, 263
 Snakes, poisonous, 147, 148
 South African War, I M S officers serving in, 100
 Souttar, Sir Henry, 245
 Spackman, W C , 180
 Spain as world power, 9
 Spence, James, 130
 Spice trade, 5, 6
 Spiers-Alexander, Alister Ralph, 264
 Spottiswood, William, 262
 Sprawson, Sir Cuthbert, 238, 268
 Sprenger, Aloys, 117
 Stallworthy, Dr , 29
 Stanley Medical School, 237
 Station hospitals, 142
 Stefano, Santo, 7
 Stephens, Thomas, 15
 Stewart, Walter, 68
 Stiebel, Charles, 264
 Stovell, 267
 Strachan, George, 26, 41
 Strong, Francis Pemble, 80
 Sub-assistant surgeons, 206, 208
 Suleiman of Bussorah, 3
 Surat, factory at, 25, 26
 " Surgeon's Mate," 24, 125
 Surgeon-general of East India Company, duties of, 24
 Surgeons, conditions of admission to I M S , 109, 131
 double commissions for, 67
 establishment, size of, 71
 examination of, 69, 110
 granted substantive rank in I M S , 134
 in the service of the Princes, 41
 Surgeons' mates, 33
 Surgeons-General, 268
 Surgical instruments, supply in wartime, 242, 244
 Sutherland, — , 95
 Sutherland, John, 219
 Sutherland, Philips Warren, 121
 Swinton, Archibald, 92
 Symons, Sir Henry, 268
- Tackaberry, John Gailey**, 185
 Taylor, John, 57, 58
 Thacker, William, 131

- Thomas, Francis Balladon, 81
 Thomson, J G , 240
 Thomson, S J , 100
 Thorne, Robert, 13
 Timur the Lame, 7
 Toomey, Francis, 75
 "Topographia Christiana," 3
 Treherne, F H , 181
 Tritton, Edmund, 120
 Tropical diseases, 124
 medicine, research on, 199
 teaching of, 237
 Trotter, Robert, 60
 Trypanosomiasis, 124
 Tuberculosis Association of India, 250
 Turing, Robert, 54, 60
 Turkey and Levant Company, 14
 Turnbull, David, 89, 91
 Turner, George, 125
 Twining, W , 99
 Tyler, Sir John William, 139
- Ubhaya, N R R., 180**
 Umphelby, J E , 102
 Uncovenanted Medical Service, 138
 United Company of Merchants of England Trading to
 the East Indies, 23
 Usbek Khan, 4
- Vaccination, 163, 255**
 Varthema, Ludovico di, 7
 Vasco da Gama, 9
 Venice, commercial development of, 4
 Vernacular Medical Schools, 234
 Verney, Lovatt Committee, 188, 189
 "Vestiges of Old Madras," 36
 Victoria Cross awards, 149, 260
 Vorburg, Gelmer, 42
- Waddell, Dr , murder of, 39**
 Waddell, Laurence Austin, 148
 Walker, Sir Norman, 197
 Walker, Thomas, 68
- Wall, A J , 148
 Wall, F , 148
 Wallick, Nathaniel, 90
 Walsh, Patrick Joseph, 263
 War of 1914-18, I M S activities in, 171
 of 1939-45, I M S activities in, 240
 Waring, Edward John, 148
 Wariyar, Puhuzi Raghava, 185
 Warren, William, 38
 Warren Fisher Committee Report, 191
 Wase, John Peter, 70
 Wasmus, Charles, 92
 Watson, George, 124
 Wattson, Henry, 38
 Wells, Sir Thomas Spencer, 144
 West Coast Medical Service, 39
 Westminster, Treaty of, 22
 Weston, Michael, 53
 Whigham, George, 262
 Whitchurch, Harry Frederick, awarded V C , 149,
 261
 White, F Norman, 226, 268
 White, John, 264
 Whiting, Edward, 33
 Wilkins, J S , 100
 Williams, Andrew, 67, 73
 Williamson, B , 99
 Willmot, Dr , 34
 Wilson, Horace Hayman, 117
 Wilson, James, 92
 Wilson, Nathaniel, 58
 Wilson, Thomas, 93, 262
 Wingate, Thomas, 262
 Wise, Thomas Alexander, 114
 Women medical students, 237
 Women's Medical Service, 198
 Wood, Leonard, 68
 Woodall, John, 125
 appointed surgeon-general of East India Com-
 pany, 23
 Woods, James, 263
 Woodward, Thomas Hewlett, 120, 263
 Wright, Robert Ernest, 202
- Yeld, Thomas, 108**

LIST OF SUBSCRIBERS

AHMAD, T D , Col
 Ainsworth, H , Col
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